Federal Environmental Remediation Contractual and Insurance-Based Risk Allocation Schemes: Are They Getting the Job Done?

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A Thesis submitted to

The Faculty of

The George Washington University
Law School
in partial satisfaction of the requirements
for the degree of Master of Laws

August 31, 2005

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NOV 02 2005

REPORT DOCUMENTATION PAGE			*Form Approved OMB No. 0704-0188*
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.			
1. AGENCY USE ONLY *(Leave blank)*	**2. REPORT DATE** 1.Nov.05	**3. REPORT TYPE AND DATES COVERED** THESIS	
4. TITLE AND SUBTITLE FEDERAL ENVIRONMENTAL REMEDIATION CONTRACTUAL AND INSURANCE-BASED RISK ALLOCATION SCHEMES: ARE THEY GETTING THE JOB DONE?			**5. FUNDING NUMBERS**
6. AUTHOR(S) MAJ MOMBER AMY L			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) THE GEORGE WASHINGTON UNIVERSITY			**8. PERFORMING ORGANIZATION REPORT NUMBER** CI04-1691
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) THE DEPARTMENT OF THE AIR FORCE AFIT/CIA, BLDG 125 2950 P STREET WPAFB OH 45433			**10. SPONSORING/MONITORING AGENCY REPORT NUMBER**
11. SUPPLEMENTARY NOTES			
12a. DISTRIBUTION AVAILABILITY STATEMENT Unlimited distribution In Accordance With AFI 35-205/AFIT Sup 1 DISTRIBUTION STATEMENT A Approved for Public Release Distribution Unlimited			**12b. DISTRIBUTION CODE**
13. ABSTRACT *(Maximum 200 words)*			
14. SUBJECT TERMS			**15. NUMBER OF PAGES** 114
			16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT	**18. SECURITY CLASSIFICATION OF THIS PAGE**	**19. SECURITY CLASSIFICATION OF ABSTRACT**	**20. LIMITATION OF ABSTRACT**

Standard Form 298 (Rev. 2-89) (EG)
Prescribed by ANSI Std. 239.18
Designed using Perform Pro, WHS/DIOR, Oct 94

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THE VIEWS EXPRESSED IN THIS ARTICLE ARE THOSE OF THE AUTHOR AND DO NOT REFLECT THE OFFICIAL POLICY OR POSITION OF THE UNITED STATES AIR FORCE, DEPARTMENT OF DEFENSE, OR THE U.S. GOVERNMENT.

I. INTRODUCTION

Federal environmental remediation projects are laden with risks – risks that are often undetectable before remediation work begins. Recognizing they cannot specifically account for such unknown contingencies via contract, the Government and remediation contractors employ contractual and insurance-based methods to shift or reduce their respective risks. This thesis examines and critiques the effectiveness of such risk-shifting measures as they pertain to the Government, the remediation contractor, and, most importantly, getting the job done.

To provide a foundation for understanding federal environmental remediation contracts and risk allocation therein, Chapter II begins with an overview of the circumstances that make federal environmental remediation contracts unique. Those circumstances include the variant conditions of cleanup sites; complexity of relevant environmental and federal procurement laws; heightened community interest in project successes and failures; and contracting parties' potential exposure to staggering unanticipated expenses. Chapter II concludes with an analysis of Government and contractor motivations for taking on such risky projects. This background is essential, because some, if not all, of these factors frequently impact the way federal environmental remediation contracts are structured.

Federal environmental remediation contracts are generally structured in a manner that clearly assigns risks to one party or the other. With that in mind, Chapter III provides a detailed look at the contractual methods for reducing or shifting federal environmental remediation risks. The contract type, specifications, and clauses are the primary contractual risk-shifting measures examined in this section. Brief case studies

are also provided to offer a glimpse into how courts and boards generally interpret these mechanisms.

Faced with limited success in employing such mechanisms, contractors often consider (and the Government frequently even requires) purchasing environmental insurance to protect themselves against the risks inherent in federal environmental remediation projects. Therefore, Chapter IV explores the risk-shifting benefits of five types of environmental insurance coverage: Cleanup Cost Cap policies; Pollution Liability policies; Finite Risk policies; Contractor's Pollution Liability policies; and Errors and Omissions policies. To provide a complete picture of environmental insurance as a risk-shifting measure, the chapter also cautions against policy exclusions and highlights difficulties associated with acquiring sufficient coverage to effectively shift or reduce policyholder risks in any given case.

The analysis then pauses, in Chapter V, to explore which contractual and insurance-based risk-shifting measures were included in the subcontract for the Lockheed failed Pit 9 cleanup and what, if any, impact such risk-shifting measures had on the project. In addition to illustrating these risk-shifting methods in action, this in-depth case study also introduces another type of risk-shifting clause: the Guarantee of Performance clause. In the end, the analysis of this case provides valuable insight into how courts apply and often strictly adhere to contractually agreed upon risk allocation schemes; highlights the dangers involved when inexperienced remediation firms "buy in" to the field; and underscores the notion that no one wins, least of all the public and the environment, when remediations fail.

The subcontract for the Lockheed failed Pit 9 cleanup is representative of the current Government Performance-Based Contracting (PBC) initiative. Therefore, Chapter VI examines, in considerable detail, this quickly growing initiative and its risk allocation implications. Such an analysis provides the groundwork to forecast where the federal environmental remediation procurement program is headed next.

Finally, in Chapter VII, the thesis concludes. The conclusion outlines the current status of risk-shifting/risk-sharing between the Government and federal remediation contractors. Then, it identifies areas ripe for improvement and offers suggestions for both the Government and Government contractors on how to approach and improve such deficient areas. Ultimately, the conclusion ends with a call for action – a call designed to improve the federal environmental remediation procurement program, as a whole, and its Government-contractor risk allocation component, in particular.

II. BACKGROUND

Government agencies enter into thousands of remediation services contracts with private firms each year to clean up contaminated federal sites. The remediation services procured may include preliminary assessments;[1] site inspections;[2] remedial

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[1] A preliminary assessment is a limited-scope investigation designed to distinguish, based on readily available information, between sites that pose little or no threat to human health and the environment and sites that require further investigation because they may pose a threat. *See* Environmental Protection Agency (EPA), *Preliminary Assessment/Site Investigation* (July 26, 2005), *available at* http://www.epa.gov/superfund/whatissf/sfproces/pasi.htm.

[2] Site inspections typically involve the collection of environmental and waste samples to determine which, if any, hazardous substances are present at the site; whether those substances are reaching nearby targets; and how to rank the site according to the Hazard Ranking System (HRS). *See id.* *See also* 42 U.S.C. § 9604(b)(1) (providing the authority for the EPA or other federal agencies to undertake such investigations).

investigations;[3] feasibility studies;[4] remedial design;[5] and remedial actions[6] – among other things.[7] Because the remedial action phase of a cleanup project is, arguably, the phase that puts both the Government and the Government contractor at the greatest risk for unanticipated costs and cost overruns, this thesis focuses, primarily, on Government contracts (or portions of contracts) for remedial actions.

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[3] During the remedial investigation phase, data is collected to characterize site conditions; determine the nature of the waste; assess human health and environmental risks; and evaluate the effectiveness of treatment technologies under consideration. *See* EPA, *Remedial Investigation/Feasibility* Study (July 26, 2005), *available at* http://www.epa.gov/superfund/whatissf/sfproces/rifs.htm.

[4] The feasibility study is conducted to develop, screen, and thoroughly evaluate a range of alternative remedial actions for consideration. *See id.*

[5] The objective of the remedial design phase is to design a cleanup remedy, including the technical drawings, specifications, and technologies required to implement the remedy. *See* EPA, *Remedial Design/Remedial Action* (July 26, 2005), *available at* http://www.epa.gov/superfund/whatissf/sfproces/rdra.htm. *See also* EPA, REMEDIAL DESIGN/REMEDIAL ACTION HANDBOOK (1995), *available at* http://www.epa.gov/superfund/whatissf/sfproces/rdrabook.htm (providing an overview of the remedial design and remedial action processes).

[6] Remedial actions involve the actual construction, operation, and implementation of the final cleanup remedy. *See id.*

[7] *See e.g.,* DEPARTMENT OF DEFENSE (DOD), DEFENSE ENVIRONMENTAL RESTORATION PROGRAMS ANNUAL REPORT TO CONGRESS FISCAL YEAR 2004 16 (2005) [hereinafter DERP REPORT FY2004] (indicating that DoD uses the *CERCLA Environmental Restoration Process Phases and Milestones*, thereby requiring the following phases be conducted, in this order, for all Defense Environmental Response Program (DERP) sites: preliminary assessment, site inspection, remedial investigation, feasibility study, remedial design, remedial action construction, remedial action operation, and long-term maintenance). *See also* Danielle Conway-Jones, *Federal Procurement of Environmental Remediation Services: Feast of Famine for Small Business*, 41 HOW. L.J. 1, 2 (1997) (citing containment; transportation and disposal of waste materials; security; and site close outs as additional functions performed under the guise of environmental remediation services).

To fully explore the nature of such contracts and how risks are allocated therein, it is helpful to understand some of the key factors that make environmental remediation contracts unique. Those factors include the variant conditions of cleanup sites; the complex laws, increased community interest, and potential for phenomenal expense involved in cleanup work; and the dynamics that motivate the Government and Government contractors to take on these projects. This section will examine each of these factors in turn.

A. Variant Cleanup Site Conditions

Government environmental remediation contracts have, by necessity, developed a character separate and distinct from all other Government contracts. One such distinguishing characteristic of remediation contracts is their customization. These contracts must be highly customized, because no two remediation sites are ever exactly the same. Rather, a wide range of pollutants contaminate federal sites throughout the nation.[8]

Some of the contaminants, like petroleum, oil, and lubricants – generally associated with past operation and maintenance activities at military installations[9]– are

[8] *See* DEPARTMENT OF ENERGY (DOE), TOP-TO-BOTTOM REVIEW OF ENVIRONMENTAL MANAGEMENT PROGRAM: STATUS OF IMPLEMENTATION REPORT TO CONGRESS I-1 (2003) [hereinafter DOE TOP-TO-BOTTOM REVIEW] (reporting that DOE's program, alone, includes the remediation and processing of approximately 25 tons of plutonium; 108 tons of plutonium residues; 88 million gallons of radioactive liquid waste; 2,500 tons of spent nuclear fuel; 137,000 cubic meters of transuranic waste; 1.3 million cubic meters of low-level waste; 324 nuclear facilities; 3,300 industrial facilities; and hundreds of radiological facilities).

[9] *See* COUNCIL ON ENVIRONMENTAL QUALITY, IMPROVING FEDERAL FACILITIES CLEANUP: REPORT OF THE FEDERAL FACILITIES POLICY GROUP 10 (1995), *available at* http://clinton3.nara.gov/OMB/inforeg/iffc-2.html.

similar to contaminants found on civilian sites.[10] However, others, including unexploded ordnance (UXO), nuclear materials, and chemical explosives, are typically only found on federal property.[11] Unfortunately, such federal contaminants tend to be particularly difficult and costly to remediate.[12] Regardless, each cleanup site – whether it is a contaminated storage area; landfill; lagoon; building; groundwater aquifer; or something else – is different from another, even if the type of site is similar.

In addition to the variant conditions of cleanup sites, several other aspects of federal environmental cleanup work make it unique. Three particularly influential aspects include the complexity of pertinent environmental laws; the community interest in environmental cleanup work; and the potential for phenomenal unanticipated expense.

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[10] *See* ASSOCIATION OF STATE AND TERRITORIAL SOLID WASTE MANAGEMENT OFFICIALS (ASTSWMO), BASE CLOSURE FOCUS GROUP PERFORMANCE-BASED REMEDIATION CONTRACTS WHITE PAPER AND COMPENDIUM OF STATE LESSONS LEARNED, 'A GUIDE TO PERFORMANCE-BASED ENVIRONMENTAL REMEDIATION' (2004) [hereinafter ASTSWMO GUIDE] (on file with author) (discussing the remediation of petroleum-contaminated sites at the Rio Vista Army Reserve Center in Rio Vista, California) (on file with author).

[11] *See id.* at 19, 20 (citing Ft. McClellan, Alabama and Lowry Air Force Base, Colorado, as examples of federal sites contaminated with UXO). *See also* M.C. BRACKEN, ET AL., *Issues and Alternatives for Cleanup and Property Transfer of Base Realignment and Closure (BRAC) Sites, in* INSTITUTE FOR DEFENSE ANALYSES (IDA) PAPER P-3538 5 (2000) (referencing a DoD estimate that ordnance affects almost 27 percent of all closed bases' acreage and 57 percent of closed *Army* bases' acreage); *Environmental Management: Hearing Before the H. Subcomm. on Energy and Water Development and Related Agencies Comm. on Appropriations*, 109th Cong. 6, 12 (2005) (citing the Hanford Nuclear Reservation, Washington, and Rocky Flats Arsenal, Colorado, as DOE cleanup sites contaminated with nuclear materials).

[12] ASTSWMO GUIDE, *supra* note 10, at 19 (exploring the difficulties involved in calculating potential remediation costs for the UXO areas at Ft. McClellan, Alabama). *See also DoD's Environmental Cleanup: Hearing Before the S. Subcomm. on Military Readiness and Defense Infrastructure Comm. on Armed Services*, 103rd Cong. (1994) (statement of Neil M. Singer, Acting Assistant Director, Nat'l Security Div., Congressional Budget Office).

Some, or all, of these components frequently affect the way federal remediation contracts are structured. Therefore, each warrants further discussion.

B. Complexity of Environmental Laws

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)[13] and the Resource Conservation and Recovery Act (RCRA)[14] are the two primary environmental laws generally applicable to federal remediation projects. Though one or the other may apply to any given project, many remediation projects (or portions thereof) are subject to both of these statutes at the same time. Similarly, the requirements of each statute apply, at least theoretically,[15] to both the Government and Government contractors, because each statute contains a broad waiver of sovereign immunity.[16]

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[13] Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, Pub. L. No. 96-510, 94 Stat. 2767 (1980).

[14] Resource Conservation Recovery Act (RCRA) of 1976, Pub. L. No. 94-580, 90 Stat. 2795 (1976). Since its passage into law, the RCRA has been amended many times. *See e.g.*, Land Disposal Program Flexibility Act of 1996, Pub. L. No. 104-119, 110 Stat. 830 (1996); Federal Facilities Compliance Act, Pub. L. No. 102-386, 106 Stat. 1505 (1992); Hazardous and Solid Waste Amendments of 1984, Pub. L. No. 98-616, 98 Stat. 3221 (1984); Solid Waste Disposal Act Amendment of 1980, Pub. L. No. 96-482, 94 Stat. 2334 (1980); Quiet Communities Act, Pub. L. No. 95-609, 92 Stat. 3801 (1978).

[15] *See* John F. Seymour, *Liability of Government Contractors for Environmental Damage*, 21 PUB. CONT. L.J. 491, 495 (1992) (citing a statement of F. Henry Habicht II, the then Asst. Atty. Gen., Land and Natural Resources, and *Dep't of Energy v. Ohio*, 503 U.S. 607 (1992), as examples of the ways the Government attempts to get around its promise to obey environmental laws by insulating agencies from EPA and state environmental enforcement suits). *But see Crowley Marine Servs. v. FEDNAV, Ltd.*, 915 F. Supp. 218 (E.D. Wash. 1995) (finding *Dep't of Energy v. Ohio* superseded by the Federal Facility Compliance Act, which renders all actions of the Federal Government, past and present, subject to the solid and hazardous waste laws).

[16] *See* 42 U.S.C. § 9620(a)(1). CERCLA's sovereign immunity waiver provides: "Each department, agency, and instrumentality of the United States (including the executive, legislative, and judicial branches of government) shall be subject to, and comply with, this chapter in the same manner and to the same extent, both procedurally and

1. CERCLA Overview

In 1980, Congress passed CERCLA, sometimes touted as "the most prominent federal environmental statute,"[17] to address the detrimental effects of hazardous waste sites.[18] Six years later, Congress amended CERCLA to authorize additional monies to remediate Superfund sites and to establish national cleanup standards and new regulatory programs.[19] CERCLA's principal function as a remedial statute is to provide the federal government, state governments, and private citizens (when appropriate) with the authority to take action in response to the release or substantial threat of release of any hazardous substance which could imminently and substantially threaten public health or welfare.[20] To effectuate its remedial purposes, CERCLA utilizes common-law doctrines, like strict; joint and several; and retroactive liability, to shift the costs and burdens of site cleanups to "responsible" parties.[21]

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substantively, as any nongovernmental entity, including liability under section 9607 of this title." *See also* 42 U.S.C. § 6961(a); Federal Facilities Compliance Act §1004(15) (providing a sovereign immunity waiver under RCRA, similar to the one provided under CERCLA).

[17] Troyen A. Brennan, *Environmental Torts*, 46 VAND. L. REV. 1, 48 (1993).

[18] *See* H.R. REP. NO. 1016, 96th Cong., 2d Sess., pt. 1, at 18-19 (1980) (describing the "Valley of the Drums" and urging enactment of CERCLA to ameliorate improperly managed hazardous waste sites, particularly the 1200 to 2000 sites that were believed to pose serious risks to public health); Chris Amantea & Stephen C. Jones, *The Growth of Environmental Issues in Government Contracting*, 43 AM. U.L. REV. 1585, 1590 (1994).

[19] *See* Superfund Amendments and Reauthorization Act (SARA) of 1986, Pub. L. No. 99-499, 100 Stat. 1613 (1986).

[20] *See* 42 U.S.C. § 9604(a).

[21] *See e.g., New York v. Shore Realty Corp.*, 759 F.2d 1032, 1042 (2d Cir. 1985) (holding responsible parties strictly liable under CERCLA, pursuant to Congressional intent); *United States v. Alcan Aluminum Corp.*, 315 F.3d 179, 190 (2d Cir. 2003) (finding CERCLA's retroactive liability scheme constitutional after reviewing the purpose of the

2. RCRA Overview

While CERCLA establishes a framework for assessing "after-the-fact" cleanup liability, RCRA's primary purpose is "to reduce the generation of hazardous waste [in the first place] and to ensure the proper treatment, storage, and disposal of that waste which is nonetheless generated. . . ."[22] Therefore, RCRA generally governs the management of hazardous waste from its creation ("cradle") to its final resting place ("grave"). Managing such waste from cradle-to-grave is designed to minimize present and future threats to human health and environment.[23] Although RCRA's predominant focus pertains to ongoing and future operations, it also authorizes the investigation and remediation of past waste sites – offering a corrective action program similar to CERCLA's with different, though sometimes overlapping, requirements.[24] RCRA also authorizes the EPA and citizens to enforce these and the other RCRA regulatory requirements by seeking administrative, civil, or criminal penalties against parties (including the Government) who fail to comply.[25]

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statute and relevant case law); *But see Cooper Indus., Inc., v. Aviall Servs., Inc.*, 125 S. Ct. 577 (2004) (concluding that a private party who has not been sued under CERCLA § 106 or §107(a) may not obtain contribution from other liable parties).

[22] *Meghrig v. KFC Western, Inc.*, 516 U.S. 479, 483 (1996).

[23] *See* 42 U.S.C. § 6902(b).

[24] *See* 42 U.S.C. § 6924(v).

[25] *See* 42 U.S.C. §§ 6928, 6972.

3. The Environmental Law Conundrum

Government and contractor attempts to clearly delineate their potential liability for environmental risks are often foiled by the aptly-described, "mind-numbing"[26] and "stupefyingly complex"[27] nature of CERCLA, RCRA, and other environmental regulations. The considerable breadth of these statutes and the lack of any specific environmental cost principles in the Federal Acquisition Regulations (FAR) also contribute to this risk allocation riddle.[28] In addition, remediation projects may be subject to a number of overlapping state and local environmental laws, creating confusion as to the priority of cleanup standards as well as conflicting and ambiguous directives.[29] When such confusion occurs, the Government and contractors (to a much larger degree) are at greater risk for regulatory violations.

Even if the Government and remediation contractors can successfully navigate this minefield of pandemonium, they are still not completely out of the woods. Rather, the apparent conflict between CERCLA and RCRA policies and federal procurement law

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[26] *See American Mining Congress v. EPA*, 824 F.2d 1177, 1189 (D.C. Cir. 1987); Randoph L. Hill, *An Overview of RCRA: The "Mind-Numbing" Provisions of the Most Complicated Environmental Statute*, 21 ENVTL. L. REP. (ENVTL. L. INST.) 10254, 10257 (1991); E. Donald Elliot, *The Last Great Clean Air Act Book?*, 5 ENVTL. LAW. 321, 326-27 (1998).

[27] *See* Jerry L. Anderson, *The Environmental Revolution at Twenty-Five*, 26 RUTGERS L.J. 395, 411 (1995).

[28] *See* Seymour, *supra* note 15, at 493. *See also* Kenneth Michael Theurer, *Sharing the Burden: Allocating the Risk of CERCLA Cleanup Costs*, 50 A.F. L. REV. 65, 68 (2001).

[29] *See e.g., Colorado v. U.S. Dept. of Army*, 707 F. Supp. 1562, 1572 (D. Colo. 1989) (holding that federal facility cleanups are subject to state hazardous waste laws despite ongoing Superfund cleanups); Colorado *v. Dept. of Army*, 33 ERC (BNA) 1585 (D. Colo. 1991) (determining, two years later, that compliance with the state law was not required after the same site [referenced above] was listed on the National Priorities List).

policies adds another level of confusion to this labyrinth.[30] As previously stated, CERCLA and RCRA are designed to hold any party (including the Government) responsible for past, present, and future actions that threaten human health, welfare, or the environment.[31] Federal procurement law, on the other hand, imposes upon the Government an obligation to aggressively protect the taxpayer's money.[32] Therefore, CERCLA and RCRA policies requiring the Government spend taxpayer dollars to remediate sites often frustrate federal procurement law policies intended to shield the public fisc.

The Government and Government contractors frequently attempt to take advantage of this "grind" by trying to use CERCLA, RCRA *and* federal procurement laws to offset their potential environmental liability. Although this thesis focuses on the federal procurement law dimension of this risk-shifting "dance," CERCLA and RCRA play a powerful role in determining which party, ultimately, bears the risk of environmental liabilities. Working within this complex legal landscape certainly makes contracting for environmental cleanup different than contracting for other services. The impassioned community interest in environmental cleanups is another distinguishing factor.

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[30] *See* Phillip M. Kannan, *The Comensation Dimension of CERCLA: Recovering Unpaid Contract Costs*, 30 U. MEM. L. REV. 29, 52 (1999).

[31] *See* 42 U.S.C. §§ 9604(a), 6902(b).

[32] *See* Ralph C. Nash & John Cibinic, *Contracting Officer Determinations: For Better or Worse*, 6 NO. 6 NASH & CIBINIC REP. ¶ 35 (1992); *Ingalls Shipbuilding, Inc. v. O'Keefe*, 986 F.2d 486, 491 (Fed. Cir. 1993) (citing *Universal Canvas, Inc. v. Stone*, 975 F.2d 847, 850 (Fed. Cir. 1992)).

C. Community Interest in Environmental Work

Environmental conditions have increasingly been identified as the cause of injury, illness, and property damage.[33] Hazardous substances found on or around federal property may be particularly harmful (or even lethal) to the public, the environment, or both.[34] Consequently, time is generally "of the essence" in choosing and implementing an appropriate procurement strategy to remediate federal sites.[35] Few issues are of more concern to the public than issues affecting their health and property. Therefore, the success or failure and timeliness of federal environmental remediation contracts tends to strike much closer to the heart of a community than the successes, failures, or timeliness of contracts for "widgets" or other services.

The Department of Energy (DOE) and the Department of Defense (DoD) have been charged with cleaning up sites that pose some of the nation's most dangerous risks to public health and the environment.[36] As of October 2003, DOE's Environmental

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[33] *See* EPA, *Sources of Common Contaminants and Their Health Effects* (2004), *available at* http://www.epa.gov/superfund/programs/er/hazsubs/sources.htm); U.S. Dept. of Health and Human Services, *Cancer and the Environment* (2003), *available at* http://www.niehs.nih.gov/oc/factsheets/cancer-environment.pdf. *See also Morgan v. Brush Wellman, Inc.*, 165 F. Supp. 2d 704, 709 (E.D. Tenn. 2001) (describing Beryllium as "per molecule the most deadly substance known to mankind.").

[34] *See e.g.*, Lucinda Marshall, *Military Pollution: The Quintessential Universal Soldier*, Mar. 27, 2005, *available at* http://www.comondreams.org/views05/0327-21.htm; Peter Eisler, *Both Sides Armed with Science and Studies in Conflict over Health Risks,* USA TODAY, October 14, 2004.

[35] Recognizing the time-sensitive nature of the potential effects of environmental contamination, Congress made expeditious cleanup of contaminated sites one of CERCLA's primary remedial objectives. *See* S. REP. NO. 96-848, 96th Cong. 2d Sess. 12, 13 (1980). *See also Boeing Co. v. Cascade Corp.*, 207 F.3d 1177, 1191 (9th Cir. 2000).

[36] *See* DOE TOP-TO-BOTTOM REVIEW, *supra* note 8, at I-5; DERP REPORT FY2004, *supra* note 7, at 17.

Management (EM) program encompassed the remediation and processing of approximately 324 nuclear facilities; 3,300 industrial facilities; and hundreds of radiological facilities.[37] In fiscal year 2004, DoD's corresponding program, the Defense Environmental Restoration Program (DERP), addressed a total of 31,070 sites at 1,817 installations and 2,943 formerly used defense sites (FUDS).[38] Of those sites, 27,189 fell under DoD's Installation Restoration Program (IRP);[39] 3,398 were covered by DoD's Military Munitions Response Program (MMRP);[40] and 483 were categorized as Building Demolition and Debris Removal (BD/DR).[41]

Although both DOE and DoD programs are focused on reducing risks to public health and the environment, these agencies, like other federal agencies, have not always been successful in implementing timely, appropriate environmental remediation procurement strategies. Such strategy failures have often left communities disappointed and disillusioned.[42] DOE candidly recognized its responsibility for such public

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[37] DOE TOP-TO-BOTTOM REVIEW, *supra* note 8, at I-1.

[38] DERP REPORT FY2004, *supra* note 7, at I-2.

[39] The IRP addresses hazardous substance, pollutant, or contaminant releases that pose environmental health and safety risks. *See id.*

[40] The MMRP addresses environmental health and safety hazards from UXO and discarded military munitions and includes sites other than operational ranges that require a military munitions response. *See id.*

[41] The BD/DR program addresses the demolition and removal of unsafe buildings or structures. *See id.*

[42] If such failures result in noncompliance with environmental laws and state/federal regulators fail to enforce those laws, dissatisfied citizens may be able to sue for compliance under citizen suit provisions, including those found in 42 U.S.C. § 6928 and 42 U.S.C. § 9603(b). However, the public may get involved earlier in the process by submitting comments; requesting public hearings to clarify information or voice

dissatisfaction in an October 2003 "Top-to-Bottom" review of its EM program.[43] Among other things, DOE reported that "EM had lost its focus on risk reduction . . . EM's contracting strategy had failed to deliver cleanup and risk reduction, awarding large fees to contractors for very little in the way of tangible results . . . EM had failed to reduce environmental and public risks . . . [and] [t]he public had grown disenchanted; the environmental regulators had grown impatient; and the taxpayers had grown wary."[44] Unfortunately, these problems do not appear to be unique to DOE's EM program. Rather, DoD and other federal agency environmental programs have been the subject of similar criticisms.[45]

One way federal agencies have tried to address these problems is by altering their acquisition strategies.[46] This thesis will examine and critique some of these alterations,

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objections; and participating in remedial decisions and processes. *See* EPA, *25 Years of RCRA: Building on Our Past to Protect our Future* 13-14 (2002). The statute authorizing the DERP provides another avenue for participation via its required Restoration Advisory Board (RAB), which is established for each project to "offer an opportunity for communities to have a voice in the cleanup process by bringing people together who reflect the diverse interests of the community." *See* 10 U.S.C. § 2705(c); EPA and DoD, *Restoration Advisory Board (RAB) Implementation Guidelines* (1994).

[43] DOE TOP-TO-BOTTOM REVIEW, *supra* note 8, at I-1, 2.

[44] *Id.* The report also noted that $70 billion had been invested in the EM program from 1989-2000, yet the cost and schedule for completing the program had increased yearly. FY 2000 was provided as an example of this trend. In that year alone, over one-third of the sites extended their closure date by at least a year.

[45] *See e.g., CBO Testimony: Hearing Before the H. Subcomm. on Military Procurement and the Subcomm. on Military Readiness of the Comm. on National Security,* 104th Cong. (1996); New York City for Occupational Safety and Health (NYCOSH), *EPA Cleanup Gears Up Amid Widespread Criticism* (2002); EPA, *Guidance on Accelerating CERCLA Environmental Restoration at Federal Facilities* (1994), *available at* http://www.epa.gov/swerffrr/documents/822memo.htm).

[46] *See e.g.,* DOE TOP-TO-BOTTOM REVIEW, *supra* note 8, at I-3; ASTSWMO GUIDE, *supra* note 10, at 2.

specifically focusing on contractual and insurance-based methods federal agencies may use. While the insurance-based methods can, perhaps, be used to more readily address the community interests at stake – particularly those interests related to adverse health effects – the potential for phenomenal unanticipated expense (yet another unique characteristic of environmental cleanup work) may also be very influential in the other methods chosen for a particular project.

D. Potential for Phenomenal Unanticipated Expense

The wide range of possible latent variations in site conditions; daunting complexity of relevant environmental laws; ambiguity as to exposure for personal and property damages; and inability to get enough information to sufficiently characterize a site before work begins may preclude an accurate appraisal of the actual liability risks involved in a project and expose federal remediation contracting parties to staggering unanticipated expenses.[47] Therefore, the Government and remediation contractors cannot presume that the cost of a cleanup is finite – even when preliminary precautions (i.e., assessments, inspections, investigations, studies, and designs) have been taken.[48] Rather, in some cases, unexpected areas of contamination are not unearthed until the

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[47] *See* Gordon E. Hart, *Brownfields Redevelopment at Closed Military Bases*, *in* ENVIRONMENTAL ASPECTS OF REAL ESTATE AND COMMERCIAL TRANSACTIONS 937 (3d ed. 2004) (suggesting that larger environmental contractors may be more willing to take on such risks, especially if they are backed by appropriate environmental insurance policies or the contract encompasses enough well-characterized sites to adequately spread the risks of those that are less well characterized over the whole contract).

[48] *See Testimony of Kenneth Cornell, Executive Vice President AIG Environmental, Before the S. Subcomm. on Superfund, Waste Control and Risk Assessment of the Comm. on Environment and Public Works* 107th Cong. (2002) (testifying that "EPA often sees cost overruns of between 20% to 30% at lead NPL sites").

remedial action phase is well underway.[49] Such a discovery can send once economically feasible projects well into the red. To understand why the Government and Government contractors take on these risky projects, it is useful to examine the dynamics that motivate them.

E. Motivations for Undertaking Remediation Projects

Although idealists and politicians might argue that various factors motivate the Government and Government contractors to undertake remediation projects – including moral obligations; protection of future generations; and honor-bound duties[50] – the two principal (if not only) factors that *really* motivate them are the law and money. The legal motivations stem, primarily, from CERCLA and typically apply more to the Government than contractors, because the Government generally falls into the "owner/operator" or "arranger" category of "potentially responsible parties" (PRPs)[51] – a category that legally

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[49] *See Hearing of the Emerging Threats and Capabilities Subcommittee of the Senate Armed Services Committee Subject: Chemical Demilitarization Programs in the Fiscal Year 2006 Defense Authorization Request,* FEDERAL NEWS SERVICE, April 11, 2005 (citing new technical requirements and the discovery of the presence of mercury in portions of the Tooele mustard stockpile as one example of unexpected conditions that increase the time and cost of site remediations). *See also HWAC Urges DOE to Contract Directly for Environmental Restoration, Bypassing M & Os,* 60 FED. CONT. REP. 12, Sept. 27, 1993 (noting that "there are no guarantees as to the nature of the contaminants or of the subsurface conditions to be encountered" and government contractors often face "substantial technical uncertainties").

[50] *See* WILLETT KEMPTON ET AL., ENVIRONMENTAL VALUES IN AMERICAN CULTURE (1995); Geoffery Wandesford-Smith, *Moral Outrage and the Progress of Environmental Policy: What Do We Tell the Next Generation about How to Care for the Earth?, in* ENVIRONMENTAL POLICY IN THE 1990S 325-335 (Norman J. Vig & Michael E. Kraft eds. 1990).

[51] *See* 42 U.S.C. § 9607(a)(2),(3).

obligates the Government to take action. Remediation contractors, on the other hand, are typically motivated by money.

Vast amounts of money have been, and continue to be, invested in environmental remediation services. For example, over the past decade, DoD has put almost $43.4 billion into its environmental programs.[52] Approximately $20 billion of that investment went into environmental restoration through the DERP.[53] In fiscal year 2004 alone, Congress appropriated $1.3 billion for DoD environmental restoration activities at active installations and FUDs properties and an additional $361 million for environmental activities, including compliance, planning, and environmental restoration, at BRAC installations.[54] DoD expects such funding to remain relatively consistent, at least in the near future, since approximately $1.3 billion has been appropriated for fiscal year 2005 and requested for fiscal year 2006.[55] While DoD appropriations have been considerable, the appropriations for DOE's EM program dwarf them in comparison[56] – thereby

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[52] DERP REPORT FY2004, *supra* note 7, at 3 (providing defense environmental funding trends).

[53] *Id.* at 5.

[54] *Id.*

[55] *See* DERP REPORT FY2004, *supra* note 7, at 5-6 (providing discussion and a table, at Figure 3, of executed, appropriated, and requested environmental restoration funding with breakouts by program and category).

[56] *See* DOE TOP-TO-BOTTOM REVIEW, *supra* note 8, at I-2 (reporting that well over $70 billion has been invested in the EM program since its inception in 1989). *See also Statement of Paul M. Golan, Principal Dep. Asst. Sec. for Environmental Management, U.S. Dept. of Energy Before the H. Subcomm. on Energy and Water Development and Related Agencies Comm. on Appropriations,* 109th Cong. (2005) (re-stating DOE's FY 2006 $6.5 billion request for EM program appropriations and emphasizing that such a request is 7.8 percent less than the comparable appropriation for FY 2005).

providing another example of the significant investment in environmental remediation services.

The Government relies extensively on private remediation contractors to meet these expansive cleanup obligations.[57] This reliance, stemming from the Government's need for the scientific and technical expertise contractors can provide,[58] has created a solid market for federal environmental remediation services. With cost and time estimates like those provided by DOE ($225 billion to complete the EM program by 2035),[59] such a market attracts many contractors. However, it frequently only offers *lucrative* opportunities for those experienced and savvy enough to know how to effectively employ the previously mentioned contractual and insurance-based methods to shift or reduce the risks inherent in environmental remediation work. Such methods and their employment (by both the Government and remediation contractors) are examined, in detail, in the next two sections of this thesis.

III. CONTRACTUAL METHODS FOR REDUCING/SHIFTING RISKS

In an ultimate risk avoidance regime, the Government and Government contractors attempt to determine what could go wrong before contract performance begins so they can contract for those contingencies. Unfortunately, given the latent

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[57] *See* Seymour, *supra* note 15, at 499 (citing a statement made by the Office of Technology Assessment (OTA) that "[t]o a large extent, the U.S. Environmental Protection Agency's Superfund program attempts to manage environmental cleanups by managing contractors" and a DOE five-year plan detailing DOE operations as evidence of the fact that most federal remediation projects are conducted by private contractors).

[58] *See e.g.*, DOE TOP-TO-BOTTOM REVIEW, *supra* note 8, at II-2 (summarizing DOE's past, current, and future acquisition strategy and contract management to include selecting contractors with special skills needed for cleanup work).

[59] *See id.* at I-2, II-2.

nature and unanticipated costs characteristic of environmental cleanup projects, there are often many "unknown unknowns." Therefore, contracting for such contingencies may not always be possible in the environmental remediation services arena.

Recognizing they cannot contract for every possible contingency, especially those of which they are completely unaware, the Government and Government contractors try to do the next best thing – they jockey to put themselves in a position where unanticipated costs shift to the other party should they arise. Such risk aversion and assumption positions are memorialized, per mutual agreement, in the consequent contract between the Government and the Government contractor. The type of contract; the nature of the specifications; and the contract clause terminology are all negotiated with this in mind. This section will examine each of these risk-shifting measures.

A. Contract Type as a Risk-Shifting Mechanism

The type of procurement contract, itself, will affect the level of risk each party to the contract assumes.[60] To that end, courts often view the contracting parties' agreement to enter into a particular type of contract – detailed in the contract via the pricing arrangement – as a risk-shifting agreement.[61] Accordingly, the contract type plays a pivotal role in court decisions as to how risks are allocated.

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[60] *See generally* FAR 16.103.

[61] *Yankee Atomic Elec. Co. v. United States*, 112 F.3d 1569, 1579 (Fed. Cir. 1997); *See also ITT Arctic Servs., Inc. v. United States*, 207 Ct. Cl. 743, 524 F.2d 680, 691 (Ct. Cl. 1975); *United States v. Spearin*, 248 U.S. 132, 136 (1918).

Two basic types of contracts are used in Government contracts: cost-reimbursement contracts and fixed-price contracts.[62] Various differences, including payment methods and financing burdens, distinguish cost-reimbursement contracts from fixed-price contracts.[63] However, for our purposes, the key distinguishing factor between these two types of contracts is how performance cost risks are allocated.

1. Cost-Reimbursement Contracts

There are generally two components of cost-reimbursement contracts: cost reimbursement and fees. Under these contracts, the Government reimburses the contractor for allocable, allowable costs as they are incurred in performing the contract.[64] Although some cost-reimbursement contracts do not provide for contractor profits,[65] most do, because contractors – especially those providing an expensive service to the Government like environmental cleanup – usually work to make a profit, not just to reimburse their costs. Therefore, a contractor fee is negotiated before work begins in such cost-reimbursement contracts. This fee, which represents the profit the contractor will make on the work, may be stated as an incentive target fee,[66] an award fee,[67] or a

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[62] FAR 16.101(b).

[63] JOHN CIBINIC, JR. & RALPH C. NASH, JR., FORMATION OF GOVERNMENT CONTRACTS 1061 (3d ed. 1998).

[64] FAR 16.301-1.

[65] *See* FAR 16.302 ("Cost Contracts"); FAR 16.303 ("Cost-Sharing Contracts").

[66] When this type of fee is used, cost overruns and under-runs are compared to the contractor's proposed cost, which is considered the "target cost." A mathematical formula (not a subjective judgment) is applied to reduce fees for each dollar of an overrun and increase fees for each dollar of an under-run. So, if there is an overrun, the contractor is reimbursed its costs, but such costs come out of its fee. In contrast, if there is an under-run, the contractor is reimbursed its costs and receives some additional fees.

fixed fee[68] (subject to statutory and regulatory limitations). However, percentage-of-cost fees are specifically prohibited.[69]

The cost-reimbursement contract fee and reimbursement scheme permits Government contractors to reduce their risks. Because the contractor passes its costs directly to the Government and the contractor's fee is predetermined, performance costs (even if they are higher than expected) do not negatively impact the contractor's profit. Further, contractors can generally stop performing work, without any repercussions, if performance costs exceed estimates and the Government does not continue to furnish additional funds.[70]

However, cost-reimbursement contracts are not altogether without risk. For example, cost-reimbursement contracts do not allow contractors to avoid costs caused by

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At some point in the overrun, a minimum fee is hit (it is as low as it is ever going to get). When this happens, the government is in a pure cost reimbursement situation and there are no longer incentives for the contractor to be efficient. *See* FAR 16.304; FAR 16.405-1.

[67] Here, the contracting officer makes a subjective judgment, based on established criteria, as to what to award the contractor. In making this judgment, the contracting officer decides whether to pay the minimum (base) fee, the maximum fee, or somewhere in between. The range of effectiveness is the range between the minimum fee and the maximum fee. *See* FAR 16.305; FAR 16.405-2.

[68] Fixed-fee contracts appear neutral as to the contractor's incentive to be efficient, because the negotiated profit (fee) is fixed. Therefore, the contractor gets its fee whether it is efficient or not. *See* FAR 16.306.

[69] FAR 16.102 (implementing 10 U.S.C. § 2306(a); 41 U.S.C. § 254(b)). *See also Muschany v. United States*, 324 U.S. 49, 61-62 (1944) (explaining the basis for this statutory prohibition); *Urban Data Sys., Inc. v. United States*, 699 F.2d 1147, 1150 (Fed. Cir. 1983) (articulating general criteria for determining whether a contract is a cost-plus-a percentage-of-cost contract). This prohibition also applies to fixed-price contracts.

[70] CIBINIC & NASH, *supra* note 63.

their own fault or incompetence.[71] Additionally, the language in the contract itself may undercut the generally risk-free nature of the cost-reimbursement contract. To that end, contract specifications or statements of work may expressly place court-enforceable risks, otherwise atypical for cost-reimbursement contracts, on the contractor.

Absent such contractor fault or contract language to the contrary, the Government usually assumes the risk of unanticipated costs, cost overruns, and nonperformance when it agrees to enter into a cost-reimbursement contract. This risk allocation scheme, combined with the difficulties and additional transaction costs inherent in the administration of cost-reimbursement contracts, helps to explain the Government's preference for fixed-price contracts.[72] Such fixed-price contracts are discussed next.

2. Fixed-Price Contracts

The most common type of Government contract is the "firm-fixed-price" contract.[73] In firm-fixed-price contracts, the Government and the Government contractor agree, before any work is performed, that the Government will pay the contractor a fixed fee or price for performance of the contract.[74] This pre-established price remains static, irrespective of the contractor's actual cost experience in performing the contract.[75] Further, although the Government may agree to provide progress payments, the

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[71] *See Comptroller General Warren to the Secretary of War*, 21 Comp. Gen. 149, 151 (1941). *See also Morton-Thiokol, Inc.*, ASBCA 32624, 90-3 BCA ¶ 23,207 at 116,472.

[72] *See* Conway-Jones, *supra* note 7, at 11.

[73] *Id.*

[74] FAR 16.202-1.

[75] *Id.*

contractor must complete and deliver the work to fulfill the terms of the contract and receive final payment.[76] Otherwise, the contractor may be liable to the Government for breach.[77] In this manner, the Government is able to use fixed-price contracts to place the full responsibility for performance costs under or over the firm, fixed-price and resulting profit (or loss) squarely on the contractor.[78]

In assuming this responsibility, the contractor also assumes the risk of unanticipated costs and cost overruns.[79] This risk shift should, theoretically, reduce administrative burdens and motivate the contractor to control costs by performing diligently. However, such efficiency measures are not always enough to avoid cost overruns, especially when there are unanticipated costs.[80] Regardless, under a firm-fixed-price contract, the contractor still suffers a loss if the costs are greater than the fixed price and realizes a gain (in profits) if the costs are lower than the fixed price. In contrast, the Government is only on the hook for the fixed amount of money it agreed to in the contract – notwithstanding whether the work is easier or harder than anticipated.

Though such a government-favorable risk allocation regime is obviously attractive to the Government, using a firm-fixed-price contract may be contrary to the Government's policy on contract selection if such a contract imposes unduly high

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[76] CIBINIC & NASH, *supra* note 63.

[77] *Id.*

[78] FAR 16.101(b).

[79] *See ITT Arctic Serv., Inc.*, 524 F.2d at 691.

[80] *See Day v. United States*, 245 U.S. 159 (1917); *Phoenix Bridge Co. v. United States*, 211 U.S. 188 (1908).

(uncontrollable and unpredictable) risks on the contractor.[81] The Government's basic policy is to use the type of contract that will prompt effective contractor performance – not overwhelm the contractor or subject it to unreasonable risk.[82] After all, a contractor's failure to fulfill the terms of the contract and/or bankruptcy does not serve either party's interests.

3. Contracting Techniques Relative to Contract Type Selection

Whether contracting officers have broad or narrow discretion in determining which type of contract to use in any given procurement depends, in large part, upon whether the contract results from sealed bidding or negotiated procurement procedures. Sealed bidding contracts must be firm-fixed-price contracts or fixed-price contracts with economic price adjustment.[83] In contrast, contracts resulting from negotiated procurements may basically be of any type or combination of types as long as they promote Government interests.[84] Therefore, while contracting officers have very little discretion in selecting the type of contract when sealed bidding is involved, they have broad discretion in making such selections in negotiated procurements.

The Government preference for sealed bidding as opposed to negotiated procurements has changed over time. Prior to 1984, sealed bidding was the preferred government procurement method. However, in 1984, the Competition in Contracting Act

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[81] *See* FAR 16.103; FAR 16.104.

[82] *Id.*

[83] FAR 16.102(a).

[84] FAR 16.102(b).

of 1984 (CICA)[85] was enacted. Among other things, CICA amended prior federal procurement laws and eliminated the previous statutory preference for sealed bidding.[86]

Accordingly, now the only time contracting officers must solicit sealed bids is if the following four conditions are met: time permits sealed bidding; price and price-related factors are the sole basis for the award; discussions concerning bids are unnecessary; and more than one bid is reasonably expected.[87] When one or more of these conditions is missing, contracting officers may use negotiated procurement procedures.[88] However, contracting officers cannot haphazardly choose one procedure over another, just because it is not specifically proscribed. Rather, when given such a choice, contracting officers must select the procedure "best suited to the circumstances of the contract action and consistent with the need to fulfill the Government's requirements efficiently."[89]

In the environmental remediation context, some, if not all, of the four conditions required for sealed building generally appear to be missing. For example, the potential danger poor performance of these services could pose to the public and the environment arguably makes price only one of many factors the contracting officer should consider in awarding such contracts. Similarly, the complexity and variable nature of state and

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[85] Competition in Contracting Act (CICA), Pub. L. No. 98-369, 98 Stat. 1175 (1984).

[86] 10 U.S.C. § 2305; 41 U.S.C. § 253. *See also The Saxon Corp.*, B-221054, Mar. 6, 1986, 86-1 C.P.D. ¶ 225.

[87] FAR 6.401; 10 U.S.C. § 2304(a)(2)(A).

[88] 10 U.S.C. § 2304(a)(2)(B); *See also Integrity Management International, Inc.*, B-219998.2, Feb. 18, 1986, 1986 U.S. Comp. Gen. LEXIS 1513.

[89] FAR 6.101.

federal environmental laws suggest discussions are necessary to ensure offerors understand compliance requirements. Therefore, negotiated procurement procedures usually seem best suited to these contract actions.

Such negotiated procedures and rationale were challenged and upheld in *G.W., Inc.*[90] In that case, G.W., Inc. (GWI) protested the use of negotiated procedures by the Defense Logistics Agency (DLA) to procure hazardous waste disposal services for over 50 military installations. In the protest, GWI claimed that DLA should have asked for sealed bids instead of negotiated procedures, because negotiated procedures were improper.[91] To support its position, GWI made the following assertions: (1) sealed bidding is the preferred method of procurement; (2) the disposal services solicited are not complicated or technical enough to require discussion or negotiation, because the activity is "mature, highly refined, and thoroughly regulated"; (3) DLA can rely on whether offerors have the required licenses and permits, rather than requiring technical proposals, to determine whether offerors have the requisite technical capability and understanding of environmental laws, because state and federal environmental agencies would not otherwise issue such documents; and (4) sealed bid procedures were previously used to procure these services.[92] Unconvinced by these arguments, the Comptroller General denied GWI's protest.

In its decision, the Comptroller General reinforced CICA's elimination of the past preference for sealed bidding and found that two of the four conditions required to make

[90] *G.W., Inc.*, 65 Comp. Gen. 817 (B-222,570), 86-2 CPD ¶ 225.

[91] *Id.*

[92] *Id.*

sealed bidding mandatory were missing.[93] First, the Comptroller General noted that state and federal environmental compliance is a complex area, subject to conflicting interpretations.[94] Therefore, it determined DLA had a legitimate need to hold discussions to determine offeror understanding of environmental regulations.[95] Second, the Comptroller General found it appropriate to base this type of award on technical *and* price factors, not just price alone, considering the danger that improper performance could pose to the public health.[96]

Given the case law in this area, it is apparent that consideration of the complexity and dangers involved in environmental remediation will often result in the use of negotiated procedures to procure environmental remediation services.[97] Unlike the statutory guidance on sealed bidding, which requires the use of fixed-type contracts,[98] the statutory guidance for negotiated procurements gives contracting officers broad discretion to use either fixed-type contracts or cost-type contracts in negotiated procurements.[99] As previously discussed, the type of contract used in a particular

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[93] *Id.* (citing *The Saxon Corp*, at B-221054).

[94] *Id.* (citing *Monterey City Disposal Service, Inc.*, 64 Comp. Gen. 813 (B-218,624), 85-2 C.P.D. ¶ 261).

[95] *Id.*

[96] *Id.*

[97] *Id. See also Coastal Drilling, Inc.*, B-285085.3, Jul. 20, 2000, 2000 CPD ¶ 130; *WRS Infrastructure & Environment, Inc.*, B-281222, Jan. 12, 1999, 99-1 CPD ¶ 66; *Ebasco Constructors, Inc; Kimmins Thermal Corp.; AWD Technologies, Inc.; & Chemical Waste Management, Inc.*, B-244406, et al., Oct. 16, 1991, 91-2 CPD ¶ 341.

[98] FAR 16.102(a).

[99] FAR 16.102(b); *See also* 10 U.S.C. § 2306(a); 10 U.S.C. § 254(a).

procurement may have a significant impact on risk allocation. Therefore, the next section will explore the manner in which contracting officers exercise their discretion to determine what type of contract is appropriate in a particular negotiated procurement.

4. Selecting the Type of Contract for use in Negotiated Procurements

Government contracting officers are directed to consider a number of factors in exercising their broad discretion to select the type of contract they will use in a negotiated procurement.[100] These factors are designed to assist the contracting officer in selecting a contract type in accordance with the Government's policy, which, as previously mentioned, is to impose sufficient, but not unreasonably high, risks on the contractor to motivate quality performance.[101] Among other things, the contracting officer must consider the type, complexity, and urgency of the requirement; the contractor's technical capability and financial responsibility; and price and cost analysis.[102]

Though selecting the contract type is generally a matter for negotiation,[103] the Government ultimately decides what type of contract it will issue. While the

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[100] FAR 16.104.

[101] *See* FAR 16.103; Department of Defense Appropriations Act of 1988, Pub. L. No. 100-202, § 8118, 101 Stat. 1329 (1987) (stating, in pertinent part: "[n]one of the funds provided for the Department of Defense in this Act may be obligated or expended for fixed-price-type contracts in excess of $10,000,000 for the development of a major system or subsystem unless the Under Secretary of Defense for Acquisition determines, in writing, that program risk has been reduced to the extent that realistic pricing can occur, and that the contract type permits an equitable and sensible allocation of program risk between the contracting parties . . . ."

[102] FAR 16.104.

[103] FAR 16.103(a).

Government ordinarily prefers fixed-price arrangements in contracting,[104] firm-fixed-price contracts are only supposed to be used when "the risk involved is minimal or can be predicted with an acceptable degree of certainty."[105] Otherwise, alternative contract types – including cost-type contracts – should be considered.[106]

The considerable number of unknowns and consequent unpredictable risks typically inherent in environmental remediation suggest that using fixed-price contracts to procure these services does not strike a fair balance between contractor motivation and reasonable risk-taking. However, there has been a shift away from cost-based contracting to fixed-price contracting – perhaps, because the Government has recognized that, in addition to increased risks, there are significant transaction and opportunity costs involved in cost-type contracting.[107] Therefore, the Government often chooses to use fixed-price contracting, even for environmental remediation. Such risk allocation and cost-saving measures also impact the manner in which the Government drafts contract specifications.

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[104] FAR 35.006.

[105] FAR 16.103(b).

[106] *Id.*

[107] Ralph C. Nash & John Cibinic, *"Cost-Based" Contracting: On the Way Out?*, 12 No. 11 NASH & CIBINIC REP. ¶ 58 (1998). *See also* the Truth in Negotiations Act (TINA), 10 U.S.C. § 2306a and 41 U.S.C. § 254b; the Cost Accounting Standards (CAS), 41 U.S.C. § 422 and 48 C.F.R. pt. 9903 and 48 C.F.R. pt. 9904; and the Cost Principles, FAR Part 31; 10 U.S.C. § 2324 and 42 U.S.C. § 7256a. These are the three major statutory provisions principally driving the time and money spent by contractors and the Government to administer cost-based contracts.

B. Contract Specifications as a Risk-Shifting Mechanism

The Government uses specifications in solicitations to communicate its needs. Specifications are essentially work descriptions, including statements of work, drawings, and documents. As long as the specifications allow for full and open competition[108] and only include restrictive provisions when absolutely required to satisfy minimum Government interests,[109] there is some flexibility in how the Government drafts them to identify its needs. Therefore, some specifications describe the work in extensive detail while others simply require a certain end result. Consequently, specifications may be characterized as design specifications, performance specifications, or a combination of the two.[110]

1. Design Specifications

Design specifications, like good cooking recipes, provide "cradle to grave" instructions as to the materials that should be used and the manner in which the work should be performed.[111] The Government contractor does not have the discretion to deviate from design specifications.[112] Instead, the contractor must "follow them as one

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[108] 10 U.S.C. § 2305(a)(1)(A)(iii); 41 U.S.C. § 253a(a)(1)(c).

[109] 10 U.S.C. § 2305(a)(1)(B)(ii); 41 U.S.C. § 253a(a)(2)(B); *See also Morse Boulger, Inc.*, 66 Comp. Gen. 174 (B-224,305), 86-2 CPD ¶ 175.

[110] *See* 41 U.S.C. § 253(a)(3) and 10 U.S.C. § 2305(a)(1)(C), as modified by the FASA; *See also* FAR 11.002(a)(2)(i).

[111] *See Blake Constr. Co. v. United States*, 987 F.2d 743, 744 (Fed. Cir. 1993). *See also J.L. Simmons Co. v. United States*, 188 Ct. Cl. 684, 412 F.2d 1360 (1969).

[112] *See id.*

would a road map."[113] Accordingly, the less time and discretion the contractor is allowed, the more likely the specification is a design, rather than performance, specification.

Among other things, providing such detailed instructions allows the Government to obtain standardization; to more accurately measure and ensure contractor performance; and to avoid the duplication of costs when it has previously procured the same or similar services or products.[114] For example, the Government has, on numerous occasions, procured contractor services to conduct environmental remediation site investigations and studies. Therefore, the manner in which these services are performed may very likely be set out in design specifications even though such specifications may not be conducive for the actual cleanup work itself – particularly if the work is complex; significantly different from project to project; and long-term.

2. Performance Specifications

Performance specifications are the antithesis of design specifications. They "set forth an objective or standard to be achieved, and the successful bidder is expected to exercise his ingenuity in achieving that objective or standard of performance, selecting the means and assuming a corresponding responsibility for that selection."[115] In setting forth these expectations, performance specifications simply communicate what the Government wants as the end result. Therefore, such specifications are supposed to

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[113] *See id.*

[114] JOHN CIBINIC, JR. & RALPH C. NASH, JR., ADMINISTRATION OF GOVERNMENT CONTRACTS 267 (3d ed. 1995).

[115] *Id.* at 744.

describe the work in terms of "what" the required output is, rather than "how" the work is to be performed.[116]

Ideally, this "customer satisfaction approach"[117] permits contractors the flexibility to seek better ways to accomplish work during performance – not just during the proposal process – thereby benefiting both the contractor and the Government.[118] Using performance specifications appears to require the ability to forecast requirements in clear, specific, and objectively measurable terms at the outset of performance.[119] Unfortunately, however, accurately making such forecasts is frequently not possible – especially when a project is complex, long-term and variable, like most environmental remedial actions.[120]

Therefore, simply using performance specifications for all aspects of all projects, irrespective of whether they are long-term and/or difficult in nature, arguably, often results in either the federal government or the contractor receiving less than the benefit of their bargain. When this occurs, contractors include contingency amounts in their prices, anticipating the possibility of difficulties and failures – often referred to as "bidding a

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[116] *See* FAR 37.602-1(b).

[117] Steven L. Schooner, Lecture on Formation of Government Contracts, George Washington University Law School, Sep. 21, 2005 (author was in attendance).

[118] Ralph C. Nash & John Cibinic, *Postscript: Proposals and Promises*, 15 No. 1 NASH & CIBINIC REP. ¶ 3 (2001).

[119] *See* Ralph C. Nash & John Cibinic, *A Chance to Fix Performance-Based Contracting*, 19 No. 4 NASH & CIBINIC REP. ¶ 18 (2005).

[120] *See* JOHN AUSINK ET AL., IMPLEMENTING PERFORMANCE-BASED SERVICES ACQUISITION (PBSA): PERSPECTIVES FROM AN AIR LOGISTICS CENTER AND A PRODUCT CENTER 16, 36-39 (RAND 2002), *available at* http://www.rand.org/publications/DB/DB388.

contingency."[121] If the contractor underestimates the contingency, the Government likely receives a windfall. Alternatively, if the contractor overestimates the contingency or the contingency never occurs, the contractor likely receives a windfall. Consequently, in practice, there are very few contracts that have *purely* design specifications and very few contracts that have *purely* performance specifications. Rather, it is more common to have a combination of design and performance specifications.[122]

3. Design and Performance Specification Risk Allocation

When the Government provides a contractor with detailed design specifications, it impliedly warrants that the specifications it has provided are suitable for their intended purpose.[123] If the specifications do not meet this suitability requirement, they are considered defective. In those cases, the Government will generally be held liable for any consequent problems.[124] The mere fact that the contractor was required to examine the site or check plans does not extinguish this implied warranty. Rather, the risk regarding design specifications resides and remains, even under those circumstances, with the Government. This implied warranty risk allocation is commonly known as the "Spearin Doctrine."[125]

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[121] *See* Steven L. Schooner, *supra* note 117.

[122] *Utility Contractors, Inc. v. United States*, 8 Cl. Ct. 42, 50 n. 7 (1985); *Aleutain Constructors v. United States*, 24 Cl. Ct. 372, 379 (1991).

[123] *Stuyvesant Dredging Co. v. United States*, 834 F.2d 1576, 1582 (Fed. Cir. 1987).

[124] *See id.*

[125] *United States v. Spearin*, 248 U.S. 132 (1918).

No such implied warranty exists with regard to performance specifications. Instead, when performance specifications are used, the contractor assumes the risk. Perhaps, that is why, at least in part, the procurement process has traditionally preferred the use of performance specifications over design specifications.[126]

Despite such a preference, since most Government contracts contain both design and performance specifications, isolating which contract specification caused something to go wrong is usually required to determine who should bear the risk – the Government or the contractor.[127] If the part of the contract that caused the contractor difficulties was part of the design specification, the government bears the risk. If, on the other hand, it was covered by a performance specification, the contractor bears the risk.

However, the Government procurement risk allocation inquiry does not stop at contract type or specification. Risks are also specifically allocated by contract clauses. Therefore, the use of different contract clauses to shift performance risks is examined next.

C. Contract Clauses as a Risk-Shifting Mechanism

Using boilerplate contract clauses in Government contracts is the rule, not the exception. Therefore, unless the FAR authorizes a contract clause modification or

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[126] *See* FAR 11.101(a) (establishing that "performance-oriented" specifications are preferred over "designed-oriented" specifications in the order of preference for requirements documents); *See also* Robert J. Wehrle-Einhorn, *Use of Performance-Based Standards in Contracting for* Services, ARMY LAWYER 10 (1993); *Pitney Bowes, Inc.*, 68 Comp. Gen. 249 (B-233100), 89-1 CPD ¶ 157.

[127] *See Aleutian Constructors v. United States*, 24 Cl. Ct. 372 (1991).

omission, the standard terms and conditions found in these clauses are non-negotiable.[128] Further, once boilerplate clauses are included in a contract, they have the effect of law, because they have been promulgated.[129]

Understanding which clauses are required in a particular Government contract and the impact those clauses have on risk allocation helps in determining how to approach contingencies. The FAR does not specifically address environmental remediation risks. Rather, it simply provides a general clause mandating that contractors abide by applicable federal, state and local hazardous materials laws.[130] However, a host of other, broader contract clauses may have a key impact on who bears the risk in environmental remediation contracts. This thesis will focus on those clauses that pertain to differing site conditions;[131] changes;[132] permits and responsibilities;[133] and indemnification.[134] Because the Differing Site Conditions clause is, perhaps, the one most tailored to address the type of issues that frequently arise in environmental remediation disputes, it will be examined first.

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[128] FAR 52.104(a) (matrix listing "required" clauses, "required-when-applicable" clauses, and "optional" clauses for each principal type and/or purpose of contract).

[129] *See* FAR Part 52.

[130] FAR 52.223-3.

[131] FAR 52.236-2.

[132] FAR 52.243-5.

[133] FAR 52.236-7.

[134] Although this thesis only focuses on these four types of clauses, other clauses, including suspension and delay clauses, may also have a significant impact on who bears the risk in environmental remediation contracts. *See e.g.*, FAR 52.212-12; FAR 52.249-10.

1. Differing Site Conditions Clause

The subsurface nature of most of the contaminants that are the subject of environmental cleanup projects presents one of the major risks involved in environmental remediation work. Among other things, the contaminants' latent physical condition makes it difficult to accurately estimate the extent and cost of the work required to remediate a site before the work begins. Thus, what is ultimately required to clean up a site may differ materially from what is initially expected. When this type of disparity exists, the party who has assumed the risk for remediating the site may incur phenomenal, unanticipated expenses.[135]

The Government has recognized that contractors are generally unwilling to assume such significant risks by bidding for and engaging in remediation work without first conducting extensive site inspections and/or padding their bids to protect themselves against potential unfavorable conditions. Needless to say, exhaustive site inspections and inflated bids can significantly increase prices, inconvenience, and disruption to the Government. Therefore, the Government often uses the "Differing Site Conditions" clause[136] to make these projects more attractive to contractors.[137] The clause's most attractive feature to contractors is that it reduces contractor risks by allowing an equitable adjustment any time the contractor encounters one of two main contingencies: Type I

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[135] *See Exxon Valdez*, 270 F.3d 1215, 1244-46 (9th Cir. 2001).

[136] FAR 52.236-2.

[137] *See* FAR 37.110(e). Although the Differing Site Conditions clause is primarily used in construction contracts, and is, therefore, only "required-when-applicable" per FAR 52.301 in fixed-price construction contracts, it can be used in contracts for other services when appropriate.

(subsurface or latent physical conditions differing materially from those indicated in the contract)[138] and Type II (unknown, unusual conditions not reasonably anticipated).[139]

By placing the risk of these contingencies on the Government, this clause is designed to eliminate the need for contractors to inflate their bids to account for the worst possible conditions that might be encountered. If it works, the Government benefits from more accurate bidding and less inflation for contingencies which may never even occur.[140] In return, contractors benefit by being reimbursed for the cost difference between the conditions they reasonably expected to encounter and the conditions they really did encounter.[141]

The contractor in *Frank Lill & Sons, Inc.*[142] was able to use the Differing Site Conditions clause to secure such a benefit. In that case, the Government awarded Frank Lill & Sons, Inc. a contract to, among other things, locate; identify; remove; and dispose of all insulating materials containing asbestos in the Central Heating Plant at Plattsburgh Air Force Base.[143] To that end, the contract specifications indicated that "some asbestos

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[138] FAR 52.236-2(a)(1); *See also Foster Constr. C.A. & Williams Bros. Co. v. United States*, 193 Ct. Cl. 587, 435 F.2d 873, 875 (1970); *Stuyvesant Dredging Co. v. United States*, 834 F.2d 1576, 1581 (Fed. Cir. 1987) (detailing what the contractor must prove to recover for Type I differing site conditions).

[139] FAR 52.236-2(a)(2); *See also Appeal of Covco Hawaii Corporation*, ASBCA 26901, 83-2 BCA ¶ 16,554 (detailing what the contractor must prove to recover for Type II differing site conditions).

[140] *Foster Constr. C.A. & Williams Bros. Co. v. United States*, 193 Ct. Cl. at 613-14.

[141] *Id.*

[142] ASBCA 35,774, 88-3 B.C.A. ¶ 20,880.

[143] *Id.*

material would be encountered and there was a possibility that asbestos existed in unknown locations."[144] Though this contract language spurred Frank Lill & Sons to conduct a pre-performance inspection of the site; review the relevant contract documents; and ask additional questions, Frank Lill & Sons was still unable to determine the total extent of the asbestos in the plant prior to performing the contract.[145] After contract performance began, Frank Lill & Sons discovered additional asbestos under a boiler in the facility.

The board concluded that this additional asbestos constituted a latent physical condition materially different from that indicated in the contract specifications, even though the contract had provided notice of the existence of asbestos in unknown locations:

> This latent condition was not as to the existence of asbestos at the site, which the contract indicated, but as to the quantity of asbestos which required removal. This is consistent with the Differing Site Conditions Clause policy of permitting contractors to rely on contract indications unless simple inquiries might have revealed contrary conditions.[146]

Accordingly, the board determined that Frank Lill & Sons was entitled to an equitable adjustment to compensate it for the increased cost of removing the asbestos located under

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[144] *Id.*

[145] *Id.*

[146] *Id.*

the boiler.[147] Likewise, the board found an equitable adjustment warranted in *D.J. Barclay & Co.*[148]

Though these cases might suggest that it is relatively easy to recover the costs of additional environmental expenses incurred during contract performance when the contract contains a Differing Site Conditions clause, such opportunities are actually quite limited. The Differing Site Conditions clause offers relief *only* when there is a material difference between the conditions causing increased costs and contractor expectations or the contractor is able to meet the "relatively heavy burden of proof" required to demonstrate that the conditions it has encountered differ materially "from the 'known' and the 'usual'"[149] and the contractor could not have reasonably anticipated or discovered such conditions prior to bidding.[150] The "Changes" clause may also shift the risk of increased costs to the Government, but it has similar limitations.

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[147] *Id.*

[148] ASBCA 29005 et al., 88-2 BCA ¶ 20,741. *But see Diamond Pacific*, NASA BCA 45-0391, 92-1 BCA ¶ 24,615 (board denied contractor's differing site conditions claim because the contractor failed to conduct a pre-bid site inspection wherein it would have discovered that asbestos was likely present at the site).

[149] *Charles T. Parker Construction Co. v. United States*, 193 Ct. Cl. 320, 333, 433 F.2d 771, 778 (1970).

[150] *Perini Corporation v. United States*, 180 Ct. Cl. 768, 381 F.2d 403 (1967); *James E. McFadden, Inc.*, ASBCA 19921, 76-2 BCA ¶ 11,983.

2. Changes Clause

Though it is not necessarily required,[151] most Government contracts include a Changes clause.[152] The Changes clause provides the Government with the unilateral right to order changes during contract performance and the contractor with the right to an equitable adjustment if such changes increase performance costs or time.[153] A contracting officer's orders (oral or written)[154] or conduct (if considered a "constructive change")[155] can result in such compensable changes.

Orders that change the method of performance of the work and increase costs are an example of the type of oral or written orders that trigger equitable adjustments under the Changes clause. Such orders were at issue in *Active Fire Sprinkler Corp.*,[156] where the contracting officer ordered the Active Fire Sprinkler Corp. to make changes mandated by the Environmental Protection Agency (EPA). While the contractor usually assumes the risk for any increased costs of complying with environmental regulations that change during contract performance,[157] the *Active Fire Sprinkler Corp.* board determined that the

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[151] *See* FAR 52.301 (matrix denoting whether or not clauses are required for each principal type and/or purpose of contract).

[152] FAR 52.243-5.

[153] CIBINIC & NASH, *supra* note 114, at 381. *See also* FAR 52.243-1, *Alternate I* (changes clause for fixed-price services contracts where no supplies are furnished).

[154] *See The Lens Co. & Assocs. v. United States*, 181 Ct. Cl. 29, 385 F.2d 438 (1967).

[155] *See Industrial Research Assocs., Inc.*, DCCAB WB-5, 68-1 BCA ¶ 7069, at 32,685-86 (describing the elements of such changes).

[156] GSBCA 5461, 85-1 BCA ¶ 17,868.

[157] *See Overhead Electric Co.*, ASBCA 25,656, 85-2 BCA ¶ 18,026 (placing the risk of complying with changes in environmental regulations for disposal of toxic or hazardous substances on the contractor); *See also Warner Elec., Inc.*, VABCA 2106, 85-2 BCA ¶

additional costs incurred in that case were due to the contracting officer's imposition of special procedures and precautions that went above and beyond the changes required by the environmental regulations.[158] Therefore, the Active Fire Sprinkler Corp. was entitled to an equitable adjustment.[159]

The boards have also frequently found that contractors have the right to an equitable adjustment when there has been a "constructive change." A constructive change is a change that causes the contractor to perform different work than is otherwise contractually required or formally ordered.[160] A constructive change may be triggered by Government fault and/or the contractor's reasonable perception that such work was informally ordered.[161] Constructive changes typically fall into one of four categories: disagreements over contract requirements; defective specifications and Government nondisclosure; acceleration; and Government failure to cooperate.[162]

Long Services Corp.[163] provides an example of how the first category – disagreements over contract requirements – can result in a constructive change. The contract requirements in dispute in *Long Services Corp.*, like those disputed in *Active Fire Sprinkler Corp.*, involved asbestos removal. However, in *Long Services Corp.*, the

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18,131 (concluding that the risk of complying with changes in environmental regulations for polychlorinated biphenyl (PCB) removal was assumed by the contractor).

158 *Active Fire Sprinkler Corp.,* 85-1 BCA ¶ 17,868.

159 *Id.*

160 *Industrial Research Assocs., Inc.*, 68-1 BCA ¶ 7069 at 32,686.

161 *Id.*

162 CIBINIC & NASH, *supra* note 114, at 434.

163 PSBCA 1606, 87-3 BCA ¶ 20,109, *aff'd on recons.*, 88-1 BCA ¶ 20,270.

Government and Long Services disagreed as to what method Long Services was required to use to remove the asbestos.[164] Because it disagreed with Long Services' interpretation of the contract requirements, the Government refused to allow Long Services to use the less expensive "glove bag" method to remove the asbestos in question.[165] Determining that Long Services' proposed glove bag method was industry-approved; legal; and contract compliant, the board found that such a restriction on Long Services' method choice was improper.[166] Therefore, because this improper restriction increased Long Services' costs, the board considered it a constructive change, entitling Long Services to an equitable adjustment.[167]

In contrast, the boards have found equitable adjustments inappropriate in cases where the contractor's negligence has caused the "change" and, subsequently, increased costs. Such was the case in *D.J. Barclay & Co.*,[168] where D.J. Barclay failed to properly protect otherwise intact, but exposed, asbestos insulation from sandblasting, causing the insulation to be damaged to the extent that it had to be removed and replaced at additional expense.[169] Because D.J. Barclay's own negligent acts caused the changes that increased

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[164] *Id.*

[165] *Id.*

[166] *Id.* (recognizing that improperly restricting a contractor's choice of methods constitutes a constructive change if it increases the contractor's costs).

[167] *Id. See also Bill Wright Painting & Decorating, Inc.*, ASBCA 33343, 87-1 BCA ¶ 19,666; *Otto Randolph, Inc.*, ASBCA 11539, 66-2 BCA ¶ 5928.

[168] *D.J. Barclay*, 88-2 BCA ¶ 20,741. *See also McCullough Engineering & Contracting*, VABCA 3088, 91-3 BCA ¶ 24,056 (finding no equitable adjustment for increased cost of PCB spill clean up where contractor essentially caused the spill).

[169] *D.J. Barclay*, 88-2 BCA ¶ 20,741.

the cost of its work, it assumed the risk of those increased costs. Similarly, the contractor may be required to assume the risk of increased costs under the "Permits and Responsibilities" clause.[170]

3. Permits and Responsibilities Clause

The Permits and Responsibilities clause imposes upon the contractor the responsibility for "obtaining necessary licenses and permits, and for complying with Federal, state, and municipal laws and regulations applicable to the performance of the work."[171] This compliance requirement extends to post-award changes to laws and regulations in existence at the time of award as well as to laws, codes, or regulations passed subsequent to award.[172] In addition, this clause makes the contractor responsible for "all damages to persons or property that occur as a result of the Contractor's fault or negligence," and requires that the contractor "shall take proper safety and health precautions to protect the work, the workers, the public, and the property of others."[173]

The Permits and Responsibilities clause must be included in all fixed-price construction contracts; cost-reimbursement construction contracts; and, when applicable, fixed-price dismantling, demolition, or removal of improvements contracts.[174]

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[170] FAR 52.236-7.

[171] *Id.*

[172] *See Gulf Contracting, Inc.*, ASBCA 27221 et al., 84-2 BCA ¶ 17,472; *Norair Engineering Corporation*, ENGBCA 3375, 73-1 BCA ¶ 9955; *Electronics & Missile Facilities, Inc.*, ASBCA 8627, 63 BCA ¶ 3979.

[173] FAR 52.236-7.

[174] FAR 36.507; *See also* FAR 52.301.

Environmental remediation is usually not the focus of these contracts. However, it may become a crucial component of performance – particularly when contaminated soil cleanup or disposal is required for construction.

In *Shirley Construction Corp.*,[175] for example, Shirley Construction had to dispose of such contaminated soil as part of its contract with the Navy to construct a permanent building on a former fuel depot site in Norfolk, Virginia. Because the soil materials on the site were considered petroleum-contaminated industrial waste, they could not be used for filling or backfilling. Therefore, the contract required that such soil materials be taken to an EPA-approved Industrial Waste Site.

At the time of contract award, Virginia state regulations required the excavated industrial waste soil be sampled only once to ascertain the soil's level of contamination. This sampling requirement was designed to help determine the type of landfill appropriate for its disposal. However, approximately eight months later, when Shirley Construction consulted its potential contaminated soil disposal sites, it discovered that Virginia had issued new state regulations requiring the soil be sampled every 100 cubic yards. The new state regulations necessitated soil tests in excess of the one Shirley Construction contemplated when it bid the contract.

Since it incurred an added $9,725.41 in complying with Virginia's revised regulations, Shirley Construction requested an equitable adjustment for that amount. However, the board found that Shirley Construction was responsible for the additional

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[175] ASBCA 42954, 92-1 BCA 24,563

compliance costs under the contract's Permits and Responsibilities clause.[176] Therefore, the board denied Shirley Construction's equitable adjustment request.[177]

As this case illustrates, the Permits and Responsibilities clause is a powerful risk-shifting mechanism. In addition to imposing all known, necessary expenses on the contractor, it also puts the contractor at risk for unexpected compliance costs. Since the contractor, arguably, has no way to properly account for such possibilities in its estimates, [178] whether such risks should be shared, rather than unilaterally assumed, has been a matter of much debate for over a decade.[179] Equally, if not more, debatable, is the use of indemnification clauses to reduce or shift environmental remediation contract risks.

4. Indemnification Clause

Indemnification clauses, uniquely tailored to cover specific performance contingencies, may be used to shift the entire risk of loss from one party (who would otherwise be legally liable) to another.[180] Claims for indemnification will be strictly construed to ensure the parties are not held to obligations they never intended to

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[176] *Id.*

[177] *Id.*

[178] *See* Ralph C. Nash & John Cibinic, *Construction Contract Clauses: Time for a Reevaluation?*, 7 No. 9 NASH & CIBINIC REP. ¶ 51 (1993).

[179] *See id.*

[180] *American Transtech Inc. v. U.S. Trust Corp.*, 933 F. Supp. 1193, at 28-29 (S.D.N.Y. 1996); *See also United States v. Farr & Co.*, 342 F.2d 383, 386 (2d Cir. 1965); *Rosado v. Proctor & Schwartz, Inc.*, 66 N.Y.2d 21, 24, 494 N.Y.S.2d 851, 853, 484 N.E.2d 1354 (N.Y. 1985).

assume.[181] Therefore, indemnification clauses must explicitly describe the terms of the indemnification agreement to be enforceable. [182]

The Government successfully used such an indemnification clause to shift environmental remediation risks to the contractor in *Eason & Smith Enterprise, Inc.*[183] In that case, Eason & Smith Enterprise was awarded five Government contracts to transport hazardous waste for disposal. Pursuant to those contracts, Eason & Smith transported several hundred thousand pounds of hazardous waste from various military bases to the Diaz Refinery. After each shipment, the Diaz Refinery certified it was handling the waste in accordance with the law. However, some time after Eason & Smith Enterprise made its last shipment, the Arkansas Department of Pollution Control and Ecology (ADPC&E) determined that Diaz Refinery had improperly disposed of the waste. Consequently, the Diaz Refinery ceased operations and the ADPC&E identified the Government as a potentially responsible party (PRP).

The Government paid its $45,814.47 PRP share of the remediation costs; then sought to recoup that amount from Eason & Smith Enterprise based on the indemnification clause contained in each of the five Government-Eason & Smith Enterprise contracts.[184] The indemnification clause in those contracts shifted the risk of

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[181] *See Monaghan v. SZS 33 Assocs.*, 1995 U.S. Dist. LEXIS 2735 (S.D.N.Y. 1995).

[182] *Haynes v. Kleinewefers & Lembo Corp.*, 921 F.2d 453, 456 (2d Cir. 1990).

[183] ASBCA 47776, 97-2 BCA ¶ 28998.

[184] *Id.*

such remediation costs to Eason & Smith Enterprise.[185] Therefore, the board determined that Eason & Smith Enterprise, not the Government, was responsible for the remediation costs caused by Diaz Refinery's improper disposal methods.[186]

Contractor attempts to use this indemnification approach to shift risks are, arguably, much less likely to be successful – especially if contractors are basing their arguments on wartime contract indemnification clauses.[187] Contrary to the broad, apparently contractor-favorable language usually characteristic of the clauses at issue in these cases, the courts have often adopted the Government's narrow interpretation of this language, thereby finding that the risk of unforeseen costs falls on the contractor, not the Government.[188] Faced with limited success in employing these and the other contractual

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[185] *Id.* The pertinent part of the clause was as follows: "Upon receipt/removal of items from the various Government installations the contractor assumes accountability, physical custody and full responsibility for such items. The Government assumes no liability for any damage to . . . any other person . . . arising from or incident to the processing, transporting, disposal, or any subsequent operation performed upon . . . any component . . . of this item . . . . The contractor agrees to hold the Government harmless and indemnify the Government for any and all costs . . . incident to the processing, transporting and disposal of any subsequent operation performed upon, exposure to or contact with any component, part, constituent or ingredient of this item, material or substance, whether intentional or accidental."

[186] *Id.*

[187] *See* Randall J. Bunn, *Contractor Recovery for Current Environmental Cleanup Costs Under World War II-Era Government Contract Indemnification Clauses*, 41 A.F. L. REV. 163, 179 (1997) (detailing WWII indemnification clauses and the obstacles those clauses pose for contractor recovery); Kenneth M. Theurer, *Sharing the Burden: Allocating the Risk of CERCLA Cleanup Costs*, 50 A.F. L. REV. 65 (2001) (analyzing Vietnam Era indemnification clauses and the difficulties those clauses present concerning contractor recovery); Patrick Edward Tolan, Jr., *Environmental Liability under Public Law 85-804: Keeping the Ordinary Out of Extraordinary Contractor Relief*, 32 PUBCONLJ 215 (2003) (examining the limited scope of Public Law 85-804 as it relates to contractor recovery).

[188] *See Hercules, Inc. v. United States*, 24 F.3d 188 (Fed. Cir. 1994); *United States v. Vertac Chemical Corp.*, 46 F.3d 803 (8th Cir. 1995). Both cases included the following provision: "No person shall be held liable for damages or penalties for any act or failure

methods mentioned above, contractors frequently turn to environmental insurance to protect themselves against the risks inherent in environmental remediation contracts.

IV. Environmental Insurance as a Risk-Shifting/Reduction Method

Since its inception in 1979,[189] environmental insurance coverage has expanded and changed rapidly – particularly within the last ten years.[190] Market forces, political pressure, and the economy have often played a pivotal role in triggering such changes.[191] For example, between 1996 and 1999, when the insurance market was "soft," environmental insurance carriers responded by altering their policies to include broader and more flexible coverage; higher maximum dollar coverage limits; longer policy periods; and lower product costs.[192] Conversely, when the market became "hard" again,

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to act resulting directly or indirectly from compliance with a rule, regulation, or order issued pursuant to this Act . . . notwithstanding that any such rule, regulation, or order shall thereafter be declared by judicial or other competent authority to be invalid . . . ."

[189] *See* Janice E. Falini, *Using Environmental Insurance to Manage Risk Encountered in Non-Traditional Transactions*, 14 VILL. ENVTL. L.J. 95 (2003).

[190] *See* KRISTEN R. YOUNT & PETER B. MEYER, NORTHERN KENTUCKY UNIVERSITY & UNIVERSITY OF LOUISVILLE, MODELS OF GOVERNMENT-LED BROWNFIELD INSURANCE PROGRAMS (2002), available at http://www.epa.gov/brownfields/pdf/nku2002.pdf.

[191] *See* Anna Amarandos & Diana Strauss, *Environmental Insurance as a Risk Management Tool*, 15 NAT. RESOURCES & ENV'T 88 (2000).

[192] *See* KRISTEN R. YOUNT, NORTHERN KENTUCKY UNIVERSITY, ENVIRONMENTAL INSURANCE PRODUCTS AVAILABLE FOR BROWNFIELDS REDEVELOPMENT, 1999 2 (2000), *available at* http://www.epa.gov/swerosps/bf/pdf/insrep99.pdf. A "soft" insurance market is considered a "buyer's market," characterized by notable carrier-carrier competition, low premiums, and increased insurer capacity.

between 1999 and 2002, insurance carriers increased premiums and decreased carrier capacity.[193]

Despite the arguably fickle nature of the environmental insurance market, carefully negotiated environmental insurance policies may benefit both Government contractors and the Government. Among other things, these policies allow Government contractors to transfer risks and uncertainties to third-party insurers.[194] Accordingly, if unforeseen conditions arise, such policies provide an additional funding source to address them. As a result, contractors can take on a greater amount of risk at a reduced cost to the Government. Therefore, although such products are certainly not perfect, they can offer another effective risk allocation tool – under the right circumstances. Whether the "right" circumstances exist depends, in large part, upon the type of insurance policies available to address particular site risks.[195]

Given the unique nature and complexities of most remediation sites, boilerplate insurance policies generally provide insufficient coverage to effectively address such risks.[196] Rather, to meet Government and contractor needs, the insurance coverage must

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[193] *See* YOUNT & MEYER, *supra* note 190, at 27 (noting that from 1999-2002, insurers incurred losses from environmental claims due, at least to some extent, to the newness of the policies and limited claims experience upon which to base rate models, causing some insurers to incur losses, because they undercharged for policies and overlooked site assessment and remediation monitoring).

[194] *See* Chris A. Mattison & Edward J. Widmann, *Environmental Insurance: An Introduction for the Environmental Attorney and Risk Manager*, 30 ELR 10365 (2000). *See also* US Army Environmental Center (USAEC), *PBC FAQ* (2005), *available at* http://aec.army.mil/usaec/cleanup/pbc02a.html.

[195] *See* YOUNT, *supra* note 192, at 15. Other factors to consider in determining whether the "right" circumstances exist include the policy's dollar and time limits on claims; site assessment requirements; and cost.

[196] *See* Hart, *supra* note 47.

be specifically tailored to accommodate each individual remediation project. Several different types of environmental insurance are available, with an almost infinite variation in what can be offered in terms of the precise scope of coverage, limitations, and exclusions. This section explores the different types of environmental insurance policies most relevant to remediation contracts as well as the general scope, limitations and exclusions characteristic of each type of coverage. The section concludes with a discussion of the problematic aspects that may preclude using environmental insurance as an effective risk-management tool for remediation projects.

A. Types of Environmental Insurance Coverage

A limited number of companies specialize in the environmental insurance niche market, including AIG; XL; and Zurich.[197] Each company's policy lengths, limits, and underwriting approach vary. Accordingly, some carriers may waive exclusions or add coverages, while others may not. Further, if a policy is considered too risky for a carrier, it may not be offered to an applicant at all.[198] Therefore, like all risk management tools, environmental insurance has positive aspects (i.e., certainty) and negative aspects (i.e., coverage limitations).

Regardless, all of these companies advertise several different types of environmental insurance coverage. Each type covers certain categories of risk. Cleanup Cost Cap policies; Pollution Liability policies; and combined Cleanup Cost Cap and

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[197] Mattison & Widmann, *supra* note 194. *See also* YOUNT, *supra* note 192.

[198] *See* YOUNT, *supra* note 192, at 15 (citing an example where an insurance carrier refused to provide coverage in a situation involving contaminated well-water used for drinking, because claims were highly probable and, therefore, the carrier considered such coverage too risky).

Pollution Liability policies are the three primary types of policies used to cover remediation risks and liabilities.[199] Other insurance policies available to cover such risks and liabilities include Finite Risk; Contractor's Pollution Liability; and Errors and Omissions policies.[200]

1. Cleanup Cost Cap Policies

Cleanup Cost Cap (also commonly referred to as Remediation Stop Loss) insurance policies protect the insured against cost overruns.[201] Cost overruns occur when actual cleanup costs exceed estimated cleanup costs during the planned remediation of a specific site. Under a Cleanup Cost Cap policy, the insurance carrier pays for such costs (up to the policy limits) once they exceed the amount of money the insured party has paid for the initial projected cleanup (as approved by the insurance carrier's underwriter) plus a self-insured retention ("SIR").[202]

The SIR basically functions as a buffer for insurance carriers, similar to a deductible. As such, it is typically calculated as a percentage (generally 5 to 10

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[199] EPA, *Environmental Insurance Policy Coverage and Terms* 1 (2005), *available at* http://www.epa.gov/brownfields/insurance/ei_insurance_coverage_012405.pdf (providing a chart identifying policy type, targeted policy holders, coverage explanations, and key exclusions).

[200] *Id.* at 1-4; *See also* Mattison & Widmann, *supra* note 194. Transporter Insurance policies, Storage Tank Pollution Liability policies, and Closure/Post-Closure policies are also available. While some components of each of these policies will be discussed in the context of the primary policies listed in the text, they generally play a smaller role in providing protection against remediation risks. Therefore, individual treatment of each of these policies is beyond the scope of this thesis.

[201] Mattison & Widmann, *supra* note 194, at 16.

[202] *Id*; See also YOUNT & MEYER, *supra* note 190, at 11.

percent)[203] of the estimated cleanup costs. Consequently, a Cleanup Cost Cap policy for a $1 million remediation with a 10% SIR will not start paying for costs until the insured has expended $1.1 million – the estimated costs plus a $100,000 SIR.[204] Therefore, if costs never go above the projected cleanup costs and SIR baseline, the carrier never incurs any obligations, because the insured is responsible for those costs.

a. Scope

Although specific coverages may vary – depending, largely, upon the individual carrier and the intricacies of the project – Cleanup Cost Cap policies offer an industry-wide, common core of coverages. Such coverages include costs caused by the following: additional or higher concentrations of "known" contaminants; new or "unknown" contaminants; regulatory changes; and/or project delays caused by unexpected contamination.[205] Additionally, most Cleanup Cost Cap policies cover the costs of cleanup "at, adjacent to, or emanating from the defined remediation site location"[206] and terminate once the cleanup is complete and completion is certified – generally, via a "No Further Action" letter.[207]

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[203] *See* Mattison & Widmann, *supra* note 194. *See also* Amarandos & Strauss, *supra* note 191, at 90.

[204] YOUNT & MEYER, *supra* note 190, at 11; *See also* YOUNT, *supra* note 192, at 16 (providing a similar example).

[205] *Id.*; *See also* Mattison & Widmann, *supra* note 194. *See also* Amarandos & Strauss, *supra* note 192, at 89-90.

[206] Amarandos & Strauss, *supra* note 191, at 89.

[207] *See* Mattison & Widmann, *supra* note 194; OADUSD (Environmental Security), *Using Environmental Insurance in DoD Property Transfers: A New Tool for Managing Cleanup Risk* 2 (Apr. 2001), *available at* http://www.dtic.mil/envirodod/Policies/Cleanup/ei_factsheet.pdf.

b. Exclusions

Cleanup Cost Cap policies usually specify a number of coverage exclusions. Common exclusions include costs resulting from bodily injury; property damage; unwarranted contractor delays; unapproved cleanup plan changes; radioactive matter; asbestos; and regulator-imposed fines and penalties.[208] Long-term operations and maintenance costs are also typically excluded.[209] Rounding out the major categories of costs generally not covered under Cleanup Cost Cap policies are legal defense (associated with unanticipated remediation) and negotiation expenses – though these two categories are not targeted for exclusion as consistently as costs stemming from the other contingencies mentioned.[210]

2. Pollution Liability Policies

Pollution Liability is the second major category of insurance policies highly relevant to remediation contracts. Though these policies may be purchased alone, they are frequently purchased alongside or in stages with Cleanup Cost Cap policies.[211] While

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[208] *See* Mattison & Widmann, *supra* note 194; YOUNT & MEYER, *supra* note 190, at 11.

[209] YOUNT & MEYER, *supra* note 190, at 11 (citing pumping and treating groundwater over a period of years as an example of such uncovered long-term operation and maintenance costs).

[210] *See* YOUNT, *supra* note 192, at 17 (providing a table detailing five insurance carrier inputs regarding the coverages offered by their own company and four insurance broker inputs regarding coverages *most often* offered by the various carriers they use).

[211] *See id.* at 26 n. 8; *See also* OADUSD, *supra* note 207 (offering examples of three cleanup locations where combination Cleanup Cost Cap/Pollution Liability policies have been purchased to insure against unforeseen environmental conditions: the Fleet Industrial Supply Center, Oakland, California; Lowry Air Force Base, Denver, Colorado; and the U.S. Army Research Laboratory, Watertown, Massachusetts).

any of these purchasing methods may be effective for shifting risks to the insurer, initiating a Pollution Liability policy after a Cleanup Cost Cap policy term ends can be a particularly effective approach to protect the insured post-remediation.

a. Scope

Like the scope of coverages in other policies offered in the environmental insurance industry, the scope of Pollution Liability coverages has changed dramatically in the past decade. Now, most pollution liability policies offer on-site and off-site liability coverage[212] for claims arising from the discovery of previously unknown contamination (outside the scope of the approved remedial action plan); contamination caused by ongoing operations (released during the policy period); bodily injury (sickness, disease, mental anguish, shock, or death) or property damage (physical injury to or destruction of tangible property, including the loss of such property's use, resulting from pollution conditions).[213] Additionally, legal defense and "re-opener" costs are frequently covered.[214] If such coverages still do not afford enough protection, the insured can also

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[212] YOUNT, *supra* note 192 at 26 (defining the term "onsite" as "property designated in an insurance policy" and the term "offsite" as "locations beyond the boundaries of the insured property such as nearby parcels where pollution has migrated, disposal sites, and properties damaged during transportation of contaminants).

[213] *See e.g.*, XL Environmental, Inc., *Greenwish Insurance Company Stamford, Connecticut General Contractor's Pollution Legal Liability Policy*, 2003, *available at* http://www.ecsinc.com/forms/pdf/GIC-gcplcp.pdf (specimen pollution liability policy).

[214] *See id.* (providing a typical example of the language used in policies to cover legal defense costs in that the carrier expressly acknowledges that it has a right and duty to defend the insured, but that right and duty only extend to the applicable policy limits); YOUNT, *supra* note 192, at 27 (explaining that "re-opener" coverage insures against additional remediation costs imposed by regulators or the law after an agency re-opens a cleanup, including situations where the property's use has been modified or environmental regulations now mandate more stringent cleanup levels than those used in the intitial remediation).

generally add (for a higher premium) coverage for risks related to hazardous substances transportation and non-owned disposal sites, as well as business interruptions and diminution of property value due to newfound contamination.[215]

b. Exclusions

Pollution liability policies generally include a host of exclusionary provisions. While variations exist among carriers, such provisions typically exclude losses arising from known pollution conditions or contamination in existence prior to the inception of the policy; contractual liability; and intentional wrongful acts or noncompliance with regulatory agency orders and directives.[216] Some policies also expressly bar coverage for specific pollutants, such as asbestos, radioactive matter (i.e., radon), and lead paint.[217] Others exclude underground storage tanks – though most offer separate storage tank liability insurance.[218]

3. Finite Risk Policies

Finite Risk policies are a variation of Cleanup Cost Cap policies. The distinguishing factor between the two is that Finite Risk policies serve as a combination

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[215] *See* Zurich in North America, *Environmental – Contractor's Pollution Liability*, 2003, *available at* http://www.zurichna.com/zus/zsource.nsf/display?openform&id=384; Amarandos & Strauss, *supra* note 191, at 89.

[216] *See e.g.*, XL Environmental, Inc., *supra* note 214.

[217] *See i.d.*; *See also* Mattison & Widmann, *supra* note 194; YOUNT, *supra* note 192, at 27. *But see* Zurich in North America, *supra* note 216 (indicating that Zurich's Pollution Liability policies have "no exclusions for asbestos, lead, or radioactive matter").

[218] Amarandos & Strauss, *supra* note 191, at 90.

insurance/investment vehicle whereas Cleanup Cost Cap policies generally just provide insurance.[219] To take advantage of the Finite Risk investment component, insurance carriers usually require any insured seeking this type of coverage to pay the carrier the entire amount of the estimated cleanup costs, plus the Cleanup Cost Cap policy SIR, at the outset of the program.[220]

Once those costs are paid, the insurance carrier caps the insured's remediation costs at the amount of the deposited funds and invests those funds into an account. Though most of the account is typically used to pay cleanup costs and insurance carrier premiums, the insured and the insurance carrier will "share" any profits (earned on investment of the cleanup funds) remaining in the account at the end of the policy term.[221] If, however, remediation costs exceed the estimated cost of cleanup and the SIR, there are no profits and the insurance carrier must pay the excess costs.

Insurance carriers assume the investment and timing risks of these policies.[222] Therefore, the Finite Risk approach is usually only appropriate for projects where cleanup cost estimates are high; remediation is expected to take at least five years; and

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[219] *See* Hart, *supra* note 47.

[220] *Id.*; *See also* YOUNT, *supra* note 192, at 21.

[221] YOUNT, *supra* note 192, at 22 (suggesting that the insurer usually receives a greater share of the profits, because the insurer keeps the difference between the rate on its investment vehicles and the much lower contractually-defined rate applicable to the insured).

[222] *See* EPA, *supra* note 199, at 4; *See also* YOUNT, *supra* note 192, at 22 (explaining that "[t]he timing risk refers to the possibility that the cleanup costs will be paid out faster than estimated in the remediation plan. If this happens, the insurer will have less time to earn investment income on the funds it is holding and thus will earn less on the project than anticipated, even if there are no cost overruns. . . ." and "[t]he investment risk refers to the chance that the insurer will not be able to realize the investment return that it was expecting.")

extensive site assessments have been conducted.[223] Otherwise, insurance carriers are not likely to realize enough investment income over time to make offering these policies worthwhile.

4. Contractor's Pollution Liability Policies

Contractor's Pollution Liability Policies are specifically designed to cover risks encountered by contractors handling remediation, demolition, transportation, and disposal of hazardous materials. To that end, they insure such contractors against third-party environmental cleanup, bodily injury, and property damage claims stemming from covered contracting operations rendered by the insured on the property.[224] Additionally, these policies provide protection for pollution arising out of professional services performed by the contractor.[225]

These policies are similar to general Pollution Liability policies in many respects. In addition to the environmental cleanup, bodily injury, and property damages coverages mentioned above, both also extend coverage to protect the insured against on and offsite cleanup costs as well as defense costs.[226] Likewise, both types of policies often provide the same or comparable exclusions. However, unlike the general Pollution Liability

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[223] *See* EPA, *Environmental Insurance and Risk Management Tools in Brownfields Cleanup and Redevelopment* 16 (2005), *available at* http://www.epa.gov/brownfields/insurance/onlince_insurance_021005.pdf; *See also* YOUNT & MEYER, *supra* note 190, at 12 (providing the same criteria for brownfields, which are similar to the cleanup projects described here).

[224] *See* EPA, *supra* note 199, at 1.

[225] *Id.*

[226] *Id.*

policies,[227] Contractor's Pollution Liability policies are typically available on an occurrence as well as a claims-made basis[228] and are frequently offered in conjunction with Errors and Omissions Insurance.[229]

5. Errors and Omissions Policies

Errors and Omissions policies (also commonly referred to as Professional Liability policies) cover damages (including pollution liability) caused by any acts, errors, or omissions attributable to the insured while the insured is performing professional services.[230] Such mistakes or negligent acts can be relatively straightforward, like a failure to detect contamination during a Phase I or Phase II audit, or, ostensibly, more complicated, like the negligent design of a remedial system.[231] Regardless, the scope of the

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[227] *See* Amarandos & Strauss, *supra* note 191, at 89 (explaining that Pollution Liability policies are claims-made policies, which do not cover pollution conditions unless they are discovered and reported during the policy period).

[228] *See e.g.*, XL Environmental, Inc., *Greenwich Insurance Company, Stamford, Connecticut, General Contractor's Pollution Legal Liability Policy*, 2003, *available at* http://www.ecsinc.com/forms/pdf/GIC-gcplcp.pd (specimen claims-made policy); XL Environmental, Inc., *Greenwich Insurance Company, Stamford, Connecticut, General Contractor's Pollution Legal Liability Policy – Occurrence General Contractor's Pollution Legal Liability Policy*, 2003, *available at* http://www.ecsinc.com/forms/pdf/GIC-ogcplcp.pdf (specimen occurrence-made policy).

[229] *See e.g.*, Zurich in North America, *Environmental – Professional Environmental Consultant's Liability*, 2004, *available at* http://www.zurichna.com/zus/zsource.nsf/display?openform&id=308&changemenu=No (outlining the coverages available in one of Zurich's combination Contractor's Pollution Liability/Errors and Omissions policies); *See also* EPA, *supra* note 200, at 1 n. 14.

[230] *See* YOUNT & MEYER, *supra* note 190, at 13.

[231] *See* EPA, *supra* note 199, at 1 (categorizing these examples as events that fall under the "Coverage Explanation" section of the chart and noting that, similar to Contractor's Pollution Liability policies, these policies are offered on an occurrence or claims-made basis).

covered professional services must be carefully defined, because acts, errors, or omissions beyond the scope of defined services are not protected.[232]

B. Problematic Aspects and Drawbacks

While environmental insurance may appear to be an ideal risk-shifting option, it is neither a fail-safe solution nor appropriate for all cleanup projects. Therefore, parties to remediation contracts must thoughtfully evaluate the relevant drawbacks of environmental insurance on a case-by-case basis to determine whether such an approach will effectively shift risks in any given case.[233] Once the decision is made to pursue environmental insurance as a risk-shifting measure, the parties must navigate a virtual maze of potential pitfalls to ensure the individual policy purchased for a particular project is, in fact, tailored to provide the necessary protection for that project. Potential drawbacks and pitfalls frequently characteristic of environmental insurance policies involve issues related to the completeness and availability of coverage, as well as whether or not a claim, once made, will actually be timely paid.

1. Completeness of Coverage

The completeness of environmental insurance coverage hinges, in large part, upon the policy's "trigger language" – the precise terms used to signal what is covered in a

[232] *See e.g.*, *TerraMatrix v. U.S. Fire Ins. Co.,* 939 P.2d 483 (Colo. App. 1997) (concluding that ammonia vapors from a printer were not covered under the insured's professional liability policy, because they were not caused by a "professional service," as that term was defined in the policy).

[233] *See* Mattison & Widmann, *supra* note 194.

policy.[234] Therefore, policyholders must thoroughly review and analyze such language to ensure it triggers the intended policy coverage for risks. Retaining a qualified professional consultant, who can fully appreciate the subtle nuances of such language – even when it is broad enough to create the illusion that uncovered contingencies are covered, may be required to avoid policy interpretation pitfalls and to negotiate appropriate modifications to policy terms, if necessary to protect the insured's interests.[235]

It is often difficult to discern the extent, if any, to which terms susceptible to a number of plausible, diverse meanings trigger coverage. Therefore, such terms commonly create policy interpretation pitfalls – especially for the inexperienced and unwary. Terms that frequently fall into this category include "claims,"[236] "cleanup costs,"[237] and "legal expenses."[238]

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[234] *See* Steven L. Humphreys, *Getting the Deal Done: A Survival Guide to Environmental Problem Solving in Brownfields Transactions*, 11 FORDHAM ENVTL. LAW J. 799, 838-42 (2000).

[235] *See* Mattison & Widmann, *supra* note 194; *Reconsidering Environmental Insurance: A Maturing Market?*, MONTHLY UPDATE (Goodwin/Proctor LLP), June 2002, at 2.

[236] *See* Amarandos & Strauss, *supra* note 191, at 91 (advising policyholders that a narrow definition of the word "claim," especially one that *only* covers formal lawsuits, is a pitfall to avoid, given that policyholders are increasingly facing administrative actions rather than formal legal actions). *See e.g., County of Broome v. Aetna Cas. & Sur. Co.*, 146 A.D.2d 337; 540 N.Y.S.2d 620 (A.D. 3d Dep't 1989) (holding that coverage did not extend to a DEC administrative proceeding against the policyholder because it was not a "suit" seeking "damages").

[237] *See* Mattison & Widmann, *supra* note 194 (noting that policies that do not include both pre-cleanup site assessment and post-cleanup monitoring costs in their definition of "cleanup costs" present a pitfall for policyholders, because they may result in significant insurance gaps); YOUNT, *supra* note 192, at 18, 30 (tables showing variations in carrier definitions of "remediation costs" in Cleanup Cost Cap and Pollution Liability policies); *See also* Humphreys, *supra* note 234, at 839 (identifying, as another potential pitfall, definitions of cleanup costs limited to costs the insured is legally obligated to incur, which would exclude coverage for cleanups performed to avoid future liability because

2. Availability of Coverage

Given its perceived risk-shifting benefits, the Government frequently requires contractors obtain environmental insurance for remediation projects.[239] When appropriate, the Government may even pay the premiums for such insurance[240] – even though the Government is self-insured and, thus, does not need to purchase insurance itself.[241] However, purchasing affordable coverage, with policy dollar and time limits high and long enough to adequately protect the policyholder, can prove very difficult in many cases and virtually impossible in others. Further, even if such coverage can be purchased, pursuing payment for claims can be onerous and unrewarding.

a. Policy Costs

As is the case with any type of insurance, premiums for individual environmental insurance policies are highly variable. Factors primarily affecting the price of premiums include the way the policy is written (i.e., limits, deductibles, and definitions); the estimated

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liability doesn't currently exist and cleanups in response to affirmative orders or directives).

[238] *See* Amarandos & Strauss, *supra* note 191, at 91 (discussing some of the pitfalls related to "legal expenses" coverage, including language that limits the carrier's obligation to defend; caps such costs; and directs that such expenses be applied against overall policy limits, thereby depleting coverage for other losses).

[239] *See* USAEC, *supra* note 194, at 4 (stating that the Army generally requires contractors obtain insurance to cover 100 to 150% of the total contract cost); *See also* Air Force Center for Environmental Excellence (AFCEE), *Performance Based Contracting, Frequently Asked Questions about Insurance* 9 (2005) (indicating that insurance requirements may be included in specifications, presentation on file with author).

[240] USAEC, *supra* note 194 at 4.

[241] AFCEE, *supra* note 239.

cleanup costs; the certainty and reliability of pre-application work; and whether the policy covers one or more sites.[242] Depending upon how these factors are weighed, premiums may range anywhere from under 1 percent to 25 percent of the estimated cleanup costs.[243]

Transaction costs incurred in the insurance purchase and design process must be added to the cost of premiums to determine whether the overall cost of environmental insurance is reasonable relative to other project costs. Examples of transaction costs include costs related to securing a professional consultant's services; manpower hours diverted from other aspects of the project (especially in firms with no full-time insurance purchase and design office personnel); delays; and problems in weighing coverage alternatives.[244] If such costs, coupled with the cost of premiums, are too high, purchasing environmental insurance coverage may be cost-prohibitive – too expensive relative to its value – for a given project.[245] To that end, insurance carriers have generally decided not to even offer Cleanup Cost Cap policy coverage for sites with estimated cleanups under $1

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[242] *See* YOUNT, *supra* note 192, at 23-24 (suggesting that higher policy limits; lower deductibles/SIRs; and broader definitions generally trigger higher premiums while proven technology; less complicated sites; shorter remediation periods; detailed characterizations; qualified contractors; remediation plan approval; and multiple site coverage may reduce premium prices).

[243] *Id.* at 22; *See also* Bill Stoneman, *Insurance Exit Strategies*, RISK & INSURANCE, 2003-2005, *available at* http://www.riskandiinsurance.com/040401_environmental_1.asp (citing an interview with the Senior VP of Marsh Environmental, Alan J. Bressler, wherein Bressler stated that Cost Cap insurance typically costs between 6 percent and 12 percent of the policy limits and Pollution Liability *insurance* may cost as little as 0.25 percent of policy limits); KRISTEN R. YOUNT & PETER B. MEYER, STATE BROWNFIELD INSURANCE PROGRAMS, 2004 17-18 (2004), *available at* http://www.epa.gov/brownfields/pubs/state_report_04_revised.pdf.

[244] *See* YOUNT & MEYER, *supra* note 190, at 32.

[245] *Id.*

million (or $2 million, depending upon the carrier), reasoning that the costs required to conduct adequate assessments for these sites would make such policies cost-prohibitive.[246]

b. Policy Dollar Limits

The availability (or lack thereof) of policy dollar limits high enough to sufficiently shield policyholders from risks presents another problematic aspect of environmental insurance. Since 1999, insurers have experienced decreased returns on investments and increased losses (due, at least in part, to a considerable number of unexpected payouts – particularly on Cleanup Cost Cap policy claims).[247] These experiences, among other things, have generally caused insurers to take a more risk-adverse approach to the cleanup projects they insure, to include lowering the maximum policy dollar limits available.[248]

As a result, it has become very difficult to purchase policies with large limits.[249] In light of these difficulties and in pursuit of lower-cost coverages, policyholders may purchase policies with limits that are too low to adequately protect them – defeating the purpose for which the insurance was acquired in the first place.[250] Unfortunately, such lower-than-required limits become even less protective when multiple insureds are

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[246] YOUNT & MEYER, *supra* note 243, at 11.

[247] Goodwin/Proctor LLP, *supra* note 235; *See also* YOUNT & MEYER, *supra* note 190, at 98.

[248] *See* YOUNT & MEYER, *supra* note 190, at 27.

[249] *Id.*

[250] *See id.*, at 33.

included on a single policy[251] and/or costs tangential to the actual cleanup itself (i.e., defense costs) are applied against overall policy limits.[252]

c. Policy Time Limits

Acquiring a policy with a time limit long enough to cover the risks associated with a particular remediation project may also prove difficult – if it is even possible. Such timing issues usually arise in the context of Pollution Liability policies, because the risks covered by those policies (i.e., third-party bodily injury and property damage) can take a substantial amount of time to manifest themselves. For example, symptoms from exposure to pollutants often lay dormant for long periods of time and polluted groundwater frequently migrates at a slow pace. Therefore, it may be years before either is discovered and a claim is filed.[253]

This can make it very difficult for policyholders to avoid such risks, because Pollution Liability policies are "claims-made" policies, typically only available for periods of one to five years.[254] Consequently, if a claim is made against the insured and reported to the insurance carrier after the policy period ends, it will not be covered under the policy.[255] Given that environmental conditions often reveal themselves at a slow rate

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[251] *Id.*

[252] *See e.g.*, XL Environmental, Inc., *supra* note 213.

[253] *See* YOUNT & MEYER, *supra* note 190, at 19.

[254] YOUNT & MEYER, *supra* note 243, at 68 (noting that it may still be possible to negotiate a ten-year policy, but it would be very difficult to purchase a policy for anything over ten years).

[255] *Id.*

and policy renewal is not assured,[256] this presents a significant weakness in using environmental insurance as a risk-shifting measure.

3. Payment of Claims

Aside from the completeness and availability issues already discussed, the policyholder must often face additional issues regarding payment of claims. Among other things, there is a very real possibility that claims will be denied or payments will be significantly delayed. Carrier insolvency and coverage disputes are often responsible for such payment issues.

Though insurance companies are generally financially stable, they can (and have) become insolvent.[257] Needless to say, if the insurer cannot pay its claims, the scope of coverage becomes somewhat inconsequential.[258] Selecting an established, rated insurance provider may help to minimize, but not preclude, this potential pitfall.

Similarly, being prepared to resolve coverage disputes without having to resort to protracted, costly negotiations may reduce the negative impacts delayed payments have on a project. The limited case law in this area (due, at least in part, to the relative newness of these policies) and the absence of an insurance carrier reporting requirement for claim payment behavior make it difficult to discern how often carriers actually

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[256] *See* YOUNT & MEYER, *supra* note 190, at 33.

[257] *See* Goodwin/Proctor LLP, *supra* note 235 (identifying the Reliance National Insurance Company as one such provider recently liquidated and the Kemper Environmental Division as another provider that has not faired well in the environmental insurance market).

[258] *But see* YOUNT & MEYER, *supra* note 190, at 33 (noting that insolvency guarantee funds may provide some compensation for losses caused by the insolvency of an insurer).

dispute claims.[259] However, this lack of accountability alone is, arguably, another significant drawback environmental remediation contractors should consider in determining whether the right circumstances exist for environmental insurance.

C. Cost/Benefit Analysis

Ultimately, the problematic aspects of an insurance policy must be weighed against the benefits of the coverage it provides to determine whether environmental insurance will effectively shift or reduce risks in a given case. In making this determination, the Government and Government contractors should be particularly wary of policy language, time, and dollar limitations. Further, the value of coverage relative to its expense and the possibility that a carrier will not pay or will delay payment of legitimate claims must always be considered. Though environmental insurance is certainly not a perfect risk elimination solution, it may serve as a relatively flexible risk-shifting/reduction tool under the right circumstances.

V. THE LOCKHEED FAILED PIT 9 CLEANUP[260]

The Lockheed failed Pit 9 cleanup is a good example of how the effective use (or lack thereof) of contractual and insurance-based risk-shifting methods can impact a

[259] *Id.* at 105-6. *See also* EPA, *supra* note 2243at 22.

[260] Relevant court decisions and the Lockheed Pit 9 subcontract itself served as the primary sources of information for this section. However, plaintiff exhibits and the LMITCO/EG&G proposed "Findings of Fact" (both on file with the author) were used to supplement such case law and contract language in an effort to provide greater detail as to the contents and history of Pit 9; correspondence between and among the involved parties; and the circumstances surrounding specific language used in the RFP, specifications, and subcontract clauses. Although every effort was made to ensure these sources were cited only for their factual recitations, given their potentially inflammatory nature, information derived from these sources has been clearly identified as such.

remediation project. The subcontract to remediate Pit 9, between the Government's M&O contractor (first, EG&G, Inc. (EG&G); then, Lockheed Martin Idaho Technologies Company (LMITCO))[261] and the private remediation contractor (Lockheed Martin Advanced Environmental Systems, Inc. (LMAES)),[262] is particularly instructive. Even though the Government was not, technically, a direct party to that subcontract,[263] it played an integral role in ensuring the subcontract contained many of the risk-shifting methods previously discussed.[264] Therefore, this section will examine the LMITCO-LMAES Pit 9 subcontract, in considerable detail, to illustrate risk-shifting methods in action.

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[261] EG&G Idaho, Inc., was the M&O contractor from 1976 to 1994. EG&G signed a letter subcontract with LMAES in Aug. 1994. In Oct. 1994, LMITCO replaced EG&G as the M&O contractor and entered into a "perfected firm-fixed-price subcontract" for Pit 9 with LMAES. *See Lockheed Martin Corp. & Lockheed Martin Advanced Environmental Systems, Inc. v. U.S.*, 50 Fed. Cl. 550, 551-52 (2001), *aff'd,* 48 Fed. Appx. 752 (2002).

[262] LMAES was a subsidiary of Lockheed Martin Corporation (LMC). Since LMITCO was also a subsidiary of LMC, DOE retained all contracting and negotiating authority over the Pit 9 subcontract, barring EG&G/LMITCO from any further role in the still-pending subcontract negotiations with LMAES without prior DOE approval, until LMITCO implemented an organizational conflict of interest mitigation plan. It took approximately four months for LMITCO to implement such a plan. *See id.* at 556.

[263] *See id.* at 566 (finding no basis for privity between LMAES and the United States).

[264] The potential organizational conflict of interest between LMITCO and LMAES arguably provided the impetus for DOE's increased involvement in this subcontract. For example, it caused the DOE Contracting Officer (CO) to negotiate subcontract terms directly with LMAES and prompted the DOE creation of a Program Oversight Board (POB), responsible for overseeing acceptance of LMAES deliverables, change order request decisions, and directives affecting the LMAES guarantee of performance, as well as ensuring LMITCO did not perform any activities that would shift LMAES' fixed-price risk assumption. *See id.* at 556-57.

A. The Site

Pit 9 is part of the Idaho National Environmental and Engineering Laboratory (INEEL) complex – a DOE-owned research and engineering support site, located approximately 32 miles west of Idaho Falls, Idaho, in the northeastern portion of the Eastern Snake River Plain.[265] The wastes buried in Pit 9 originated from the Rocky Flats Weapons Plant and the INEEL itself.[266] Because these wastes were typically contaminated with radioactive and hazardous materials, they were generally "packaged" in 55-gallon drums and wooden boxes before being dumped into Pit 9.[267] At the time of closure, Pit 9 contained 6,479 such drums and boxes.[268] The waste in the drums and boxes included protective clothing, gloves, filters, rags, solvents, pieces of piping, valves, laboratory equipment and sludges, among other things.[269]

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[265] More specifically, Pit 9 is one of about 20 pits entrenched in the INEEL 88-acre Subsurface Disposal Area (SDA), within the 144 acres known as the Radioactive Waste Management Complex (RWMC), located in the southwestern portion of the INEEL. *See Lockheed Martin Idaho Techs. Co. v. Lockheed Martin Advanced Environmental Systems, Inc. & Lockheed Martin Corp. v. EG&G Idaho, Inc.*, 2004 U.S. Dist. LEXIS 24460 1, 5 (D. Idaho Oct. 29, 2004).

[266] The materials from Rocky Flats were contaminated in the production of nuclear weapons, while the materials from INEEL were contaminated during nuclear research and nuclear fuel reprocessing. *See* Plaintiff Lockheed Martin Idaho Tech. Co. and Third-Party Defendants EG&G Idaho, Inc. & EG&G, Inc.'s Findings of Fact at 9, *Lockheed Martin Idaho Techs. Co. v. Lockheed Martin Advanced Environmental Systems, Inc. & Lockheed Martin Corp. v. EG&G Idaho, Inc.*, 2004 U.S. Dist. LEXIS 24460 1 (D. Idaho Oct. 29, 2004) (Civ. No. 98-0316-E-BLW) [hereinafter LMITCO/EG&G Findings of Fact] (citing DEx. 1153, p. 21).

[267] *Id.* (citing DEx. 1153, pp. 20-21).

[268] Of this total, 3,937 were drums and 2,542 were boxes. Seventy-two additional containers of an "unknown type" were also reportedly discovered in Pit 9. *See id.* at 6 (citing DEx. 1153, p. 20).

[269] *Id.* at 9 (citing DEx. 1153, p. 21).

Several dangerous types of radioactive materials were buried in Pit 9. Plutonium and americium, both considered "transuranic" (TRU) waste, represent two such types of Pit 9 materials.[270] Each of these materials emits alpha radiation – a low energy radiation that is easy to shield, but can be extremely harmful to human health and the environment.[271] Other, much more dangerous types of Pit 9 radioactive materials include Mixed Activation Products (MAP) and Mixed Fission Products (MFP), both of which emit beta/gamma radiation – a more readily detectable radiation than alpha radiation, but also, arguably, a more significant health threat.[272] Cesium-137 and Cobalt-60 are two types of gamma-emitters believed to be in Pit 9. Though Pit 9 shipping records (obtained from waste generators) signaled the presence of these beta/gamma emitters, they did not provide enough information to determine the quantities or activities for such substances prior to remediation.[273]

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[270] *Id.* (citing DEx. 1153, p. 21).

[271] *Id.* at 10 (providing that harmful effects arise when such particles come into direct contact with body tissue; i.e., through inhalation or ingestion and citing TR 1541, 11.2-15). *See also Lockheed,* 2004 U.S. Dist. LEXIS 24460 at 10 (highlighting the fact that even when plutonium poses little danger as a radiation source, it can create a criticality – a nuclear chain reaction that can cause a burst of radiation and heat, which could be lethal or seriously injurious to workers).

[272] LMITCO/EG&G Findings of Fact, *supra* note 266, at 10-11 (noting that Gamma radiation can penetrate and damage human tissue, depending upon its energy level and citing DEx. 1153, p. 21, & TR 1544, 11. 2-9).

[273] *Id.* at 11 (citing TR 1544, 11. 10-13).

B. The Remediation Plan

In 1989, the EPA declared the INEEL a Superfund site pursuant to CERCLA, 42 U.S.C. §§ 9601 *et seq.*[274] Two years later, DOE, EPA, and the State of Idaho Department of Health and Welfare executed a Federal Facilities Agreement and Consent Order (FFA/CO), establishing a procedural framework for Pit 9 remediation efforts.[275] In compliance with that FFA/CO, DOE, EPA and Idaho issued a Record of Decision (ROD), thereby determining the substantive and technical terms for the Pit 9 subcontract.[276]

C. The Request for Proposals (RFP)

Despite LMAES' multiple presentations; political clout; and unsolicited sole source procurement proposal,[277] DOE decided to issue an RFP for the Pit 9 project. The

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[274] *Lockheed*, 50 Fed. Cl. at 551; *See also Lockheed*, 2004 U.S. Dist. LEXIS 24460 at 6 (indicating that even though most of the containers in Pit 9, including the 55-gallon drums, had deteriorated by the late 1980s, no containment or treatment effort had been attempted to that point).

[275] *See Lockheed*, 2004 U.S. Dist. LEXIS 24460 at 6. (outlining the reasons the FFA/CO specifically selected Pit 9 for early interim action: its contents "posed a serious threat;" Rocky Flats shipping records provided an estimate, albeit rough, of its contents while no estimates existed, rough or otherwise, for the rest of the SDA; and it was believed to be a representative sample of the extent of contamination that would be found in the SDA as a whole).

[276] *Id.*

[277] *See id.* at 7 (explaining that LMC perceived the environmental remediation market to be a multibillion-dollar market and, therefore, wanted to use the Pit 9 project as an entry point, hoping that it would prove itself on Pit 9 and be chosen to remediate the entire RWMC). *See also* LMITCO/EG&G Findings of Fact, *supra* note 266, at 26 (offering a Dec. 30, 1991 memo from LMAES to its chief Washington lobbyist requested the lobbyist "turn up the political heat" and highlighting consequent inquiries of an Idaho Senator as evidence of the political pressure Lockheed could exert).

project was designed to remove the TRU waste in the pit while shielding and containing (not removing) the gamma-emitters.[278] In an effort to incorporate private industry's input regarding the feasibility of the proposed RFP's objectives and to assist bidders in identifying risks, EG&G provided offerors a draft RFP; gave a tour of the pit; and conducted pre-bid conferences.[279] LMAES played an active role in this process – expressing concerns (particularly about the use of a fixed price contract);[280] identifying potential risks; and, arguably, even shaping the resulting contract.[281]

Notwithstanding LMAES's involvement and insistence otherwise, the final Pit 9 RFP called for a fixed price, performance-based contract. In addition to other performance-based criteria, the RFP established three phases of work: the Proof of Process (POP) test phase – developed to test, on a small scale, whether the bidder's process would work; the Limited Production Test (LPT) phase – established to determine, on an integrated scale, whether all systems would function as proposed; and

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[278] *Lockheed*, 2004 U.S. Dist. LEXIS 24460 at 7 (noting that neither removal nor treatment of the gamma-emitters was part of the Pit 9 project).

[279] According to the LMITCO/EG&G Findings of Fact, during the Aug. 1991 pre-bid conference, attendees were advised that the "[r]eporting confidence [is] not good . . ." with regard to the amount of beta-gamma emitters in Pit 9 and that the Pit 9 project office did not know the accuracy of the information from Rocky Flats so the "subcontractor must account for this in his proposal." *See* LMITCO/EG&G Findings of Fact, *supra* note 266, at 17 (citing TR 293, 11. 21-TR 296, 11.5).

[280] *See id.* at 20 (highlighting a letter from LMAES to EG&G, stating "[s]ince this is a first-of-a-kind demonstration, there are many unknowns and imponderables. A "cost-plus" type of contract better suits the purposes of elucidating actual unit costs upon which to base a record of decision.").

[281] *See id.* at 15-16 (asserting that Lockheed was so involved in this process that the company "boasted that 'Lockheed had developed INEEL requirements' and, in an Oct. 1995 presentation to its new sector president, claimed that "DOE bought [the] Lockheed approach" in an Oct. 1995 presentation).

the full scale remediation operation phase.[282] Further, the RFP expressly notified contractors that they bore the financial risk of the success or failure of their design and process.[283] LMAES successfully completed Phase I and was selected to proceed with Phases II and III. The next two sections examine some of the specifications and clauses included in the final LMITCO-LMAES subcontract[284] for that work.

D. Contract Specifications

The *Lockheed* court confirmed that the Pit 9 LMITCO-LMAES subcontract was, in fact, a design/build performance specification contract.[285] In reaching this conclusion, the court focused, in part, on the following portion of the contract's "Mission Statement":

> The mission of the Pit 9 Comprehensive Demonstration is to excavate, characterize, treat as necessary, and dispose or store all wastes from Pit 9 at a minimum cost to the DOE. The method of achieving this is to acquire the services of a qualified private subcontractor to perform an integrated *'turnkey'* pilot project. . . . (emphasis added)[286]

The court found the contract's use of the term "turnkey" particularly compelling on this issue.

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[282] *Lockheed*, 2004 U.S. Dist. LEXIS 24460 at 11-12.

[283] LMITCO/EG&G Findings of Fact, *supra* note 266, at 23 (quoting the RFP to say "[d]esirable attributes shall include a totally integrated "turnkey" project where "cradle-to-grave" solutions are identified, where compliance with state and federal laws and regulations are understood and addressed, [and] where maximum responsibility, authority and liability are assumed by the subcontractor.").

[284] LMITCO replaced EG&G as the M&O contractor before the final Pit 9 subcontract was issued. As previously mentioned, DOE was instrumental in negotiating the Pit 9 subcontract during this transition. *See Lockheed*, 50 Fed. Cl. at 556-57.

[285] *See Lockheed*, 2004 U.S. Dist. LEXIS 24460 at 31.

[286] *Id.*

When it analyzed the turnkey language in the contract, the court basically equated a turnkey contract to a performance specification contract. Thus, it noted that such a characterization "means that the subcontractor will use its own means to produce the end result desired by the owner" and stated that "[i]n a pure turnkey project . . . [t]he owner simply gets out of the way, and allows the contractor to use his ingenuity to complete the project. The owner reappears only when the contractor is done and ready to turn over the keys to the project. Hence the term 'turnkey.'"[287] LMITCO's stated and actual role in administering the contract provided the court additional support for its decision that the term "turnkey" aptly described the Pit 9 project.[288]

Various other contract specifications and characterizations were similarly consistent with labeling the project a performance specification project. For example, subsequent language in the Mission Statement directed that the "attributes of the subcontract include . . . [LMAES] assuming maximum responsibility, authority, and liability for the project . . . [and] minimal involvement by the DOE and [LMITCO]."[289] The court cited both of these contract provisions in reaching its turnkey/performance specification conclusion.[290]

Such directives required LMAES to design the Pit 9 remediation solution and to assume responsibility for its design's success or failure. LMAES' assumption of design

[287] *Id.* at 31, 32.

[288] Although the contract entitled LMITCO to "review and comment" on all submitted plans, the court concluded that this language did not shift the design or baseline allocation of risk from LMAES to LMITCO nor did LMITCO's actions otherwise alter the turnkey/performance-based nature of the contract. *See id.* at 34.

[289] *Id.* at 32.

[290] *Id.*

risks and responsibilities is also in harmony with characterizing Pit 9 as a performance specification project rather than a design specification project. The court specifically made this performance/design specification distinction when it highlighted the fact that the Pit 9 contract had a "complete lack of any detailed designs for a particular remediation method." [291] Consequently, the court asserted that such a lack of designs, in conjunction with the contract's turnkey label and Guarantee of Performance clause, "all operate[d] to place the entire risk of design failure on LMAES."[292] That court-referenced Guarantee of Performance clause and some of the other Pit 9 risk-shifting clauses will be examined next.

E. Contract Clauses

The Pit 9 subcontract contained a number of risk-shifting clauses. However, the clauses designed to address issues pertaining to LMAES' guarantee of performance; differing site conditions; and permits and responsibilities were, arguably, the primary risk-shifting clauses in the contract. Therefore, the following discussion details each of those clauses, in turn.

1. Guarantee of Performance (GOP) Clause

The GOP Clause was a key risk-shifting component of the Pit 9 subcontract. Such a clause was incorporated in the contract to protect EG&G/LMITCO and DOE by requiring a refund of any progress or milestone payments in the event that LMAES failed

[291] *Id.* at 33.

[292] *Id.*

to comply with Pit 9 remediation specifications.[293] The pertinent part of the Pit 9 GOP clause provides:

> In the event that the Subcontractor does not provide complete compliance with the specifications for Phase II by the completion date identified in the subcontract, the Subcontractor shall have a period of four (4) months, except for major equipment failure/redesign which the Subcontractor shall have nine (9) months, to demonstrate such compliance to the Contractor at the Subcontractors' expense. If complete compliance is not obtained by the Subcontractor in the initial period of performance plus the above referenced extension periods, the Subcontractor shall provide complete reimbursement of monies paid to the Subcontractor for work performed under Phase II.[294]

In addition to including this clause in the contract, which was signed by LMAES, LMITCO also required a corporate officer of LMAES' parent company, LMC, to sign a separate GOP clause – thereby ensuring that both LMAES and LMC were on the line for such a refund.[295]

2. Differing Site Conditions Clause

Given the uncertainties surrounding Pit 9, the Pit 9 subcontract included two Differing Site Conditions clauses: one for the construction phase; the other for the operations phase. Both clauses mirrored the standard FAR Differing Site Conditions

293 *Id.* at 32.

294 Subcontract No. C91-133136 Between Lockheed Idaho Tech. Co. & Lockheed Environmental Sys. and Tech. Co., Oct. 1, 1994, at 20 (on file with author) [hereinafter LMITCO-LMAES Pit 9 Subcontract] (issued pursuant to Contract No. DE-AC07-94ID13223 between DOE & LMITCO).

295 *See* LMITCO/EG&G Findings of Fact, *supra* note 266, at 82 (identifying Robert Young, the Group President in 1994, as the LMC corporate officer who provided the requisite signature).

clause.[296] Therefore, they required LMAES to promptly notify LMITCO in writing if LMAES encountered either of the following two conditions:

> (1) subsurface or latent physical conditions at the site which differ[ed] materially from those indicated in this subcontract, or (2) unknown physical conditions at the site, of an unusual nature, which differ[ed] materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the subcontract.[297]

If the subsurface conditions were determined to be materially different, the clauses required LMITCO to equitably adjust the subcontract price, schedule, or both.[298] However, LMAES' failure to give proper notice would preclude such recovery.[299]

3. Permits and Responsibilities Clause

The Pit 9 subcontract also contained two risk-shifting "Permits" clauses. The first clause (included in the "Purchase Orders and Subcontracts" portion of the contract) provided that ". . . the subcontractor shall procure all necessary permits or licenses and abide by all applicable laws, regulations, and ordinances of the United States and of the state, territory, and political subdivision in which the work under this subcontract is performed."[300] The second clause (located in the contract's "Construction Subcontracting" section) reiterated and expanded upon these responsibilities. To that

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[296] *See* FAR 52.236-2.

[297] *See e.g.*, EG&G Idaho, Inc. Construction Subcontract General Provisions (June 1994), *in* LMITCO-LMAES Pit 9 Subcontract, *supra* note 294, at 4; *See also Lockheed*, 2004 U.S. Dist. LEXIS 24460 at 36.

[298] *Lockheed*, 2004 U.S. Dist. LEXIS 24460 at 36.

[299] *Id.*

[300] EG&G Idaho, Inc. Standard Terms and Conditions for Purchase Orders and Subcontracts (June 1994), *in* LMITCO-LMAES Pit 9 Subcontract, *supra* note 294, at 13.

end, it stated that "[t]he subcontractor shall, without additional expense to the Contractor, be responsible for obtaining any necessary licenses and permits, and for complying with any federal, state, municipal laws, codes, and regulations applicable to the performance of the work."[301]

Accordingly, both Permits clauses identified LMAES as the party responsible for compliance with regulatory requirements. As the responsible party, LMAES was required to comply with DOE orders as well as state and federal laws and regulations. Further, LMAES – not LMITCO – assumed the risk of additional cost and/or time associated with such compliance.

F. Risk Allocation Overview

To summarize the LMITCO-LMAES Pit 9 risk allocation scheme, LMAES assumed the risks of performing a fixed price, first-of-a-kind, performance specification contract to remediate Pit 9. If LMAES encountered unexpected pit conditions, it had to continue working while it made a claim for equitable adjustment;[302] seek recovery under the Differing Site Conditions clause; and, ultimately, succeed in its remediation efforts or refund all interim progress payments it had received to LMITCO, per the Guarantee of Performance clause.[303] Further, LMAES was responsible for ensuring its operations

[301] EG&G Idaho, Inc. Construction Subcontract General Provisions, *supra* note 297, at 7.

[302] The Disputes clauses in the contract, modeled after the FAR 52.233-1 Disputes clause, provided that "[t]here shall be no interruption to the prosecution of the work during the pendency of any dispute that may arise between the parties hereto or between subcontractor and its subcontractors." *See e.g.*, EG&G Idaho, Inc. Construction Subcontract General Provisions, *supra* note 297, at 5.

[303] *Lockheed*, 2004 U.S. Dist. LEXIS 24460 at 93.

complied with all applicable orders, laws and regulations – even if such compliance required it to incur additional expenses or delays. No special environmental insurance was required or purchased for the project.[304]

The record is replete with evidence that EG&G/LMITCO made continual efforts to inform prospective offerors, including LMAES, of the ambiguous nature of the Pit 9 contents. Among other things, EG&G/LMITCO repeatedly and expressly disclaimed the reliability of the shipping records and Pit 9 content inventories[305] and conducted multiple pre-bid conferences wherein potential inaccuracies in estimates and other EG&G/LMITCO-provided information were identified.[306] Additionally, EG&G/LMITCO specifically outlined the unknowns pertaining to whether LMAES' proposed design and processes would be successful in specifications attached to the executed Pit 9 subcontract.[307]

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[304] E-mail from James F. Nagle, Oles Morrison Rinker & Baker LLP (July 5, 2005) (on file with author). Mr. Nagle served as legal counsel for LMITCO.

[305] *See e.g.*, LMITCO/EG&G Findings of Fact, *supra* note 266, at 25 (pointing out that the words "estimate," "estimated," "approximately" and "about" were used over 27 times in the listing of the Pit inventory); *Lockheed*, 2004 U.S. Dist. LEXIS 24460 at 16 (citing the Einerson report, which was provided to LMAES in Nov. 1993 and stated that "INEEL personnel have long known, based on earlier briefings and miscellaneous unclassified documents, that the 'official' numbers for the RFP inventory in the SDA are not believed to be the best estimates" and concluding that the shipping records were so inaccurate that "further analysis of the shipping records was not considered productive.").

[306] *See* LMITCO/EG&G Findings of Fact, *supra* note 266, at 16. EG&G conducted three pre-proposal conferences from 1991 to 1993. LMAES attended all three conferences.

[307] *Id.* at 98 (quoting Sec. 2.3.2.3 of the specifications, attached to the executed Pit 9 subcontract: "[b]ecause some aspect of the remedial techniques have not been proven on radioactively contaminated, hazardous waste sites like Pit 9, implementation of the preferred remedial alternative is contingent upon successful demonstration that the cleanup criteria and other performance objectives can be met in the LPT phase.").

The record also indicates that LMAES recognized and even acknowledged these substantial uncertainties before entering into the contract. For example, its then vice president and general manager, Steve J. Winston,[308] had authored a 1970s study of the Rocky Flats plutonium and concluded from that study that ". . . the Rocky Flats shipping records were inaccurate, and . . . that there may be much more radioactive waste in Pit 9 than indicated by those shipping records."[309] Along those same lines, LMAES had several internal discussions regarding the potentially "huge" disparities between the numbers reflected in the pit content *estimates* and the *actual* pit contents.[310] Further, LMAES memorialized this knowledge in writing when it wrote a 1992 letter to EG&G stating, in part, that "no one knows the contents of Pit 9. . . ."[311]

In recognition of these unknowns and their associated risks, LMAES attempted, on multiple occasions, to persuade LMITCO to change the Pit 9 contract from a fixed price contract to a cost plus fixed fee contract. During these attempts, LMAES asserted, among other things, that a fixed price contract would force "subcontractors to bid with

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[308] The court recognized that Mr. Winston played a "unique role" in this case. Although he was the general manager for LMAES during the beginning stages of the Pit 9 remediation, he later left LMAES and joined LMITCO. Eventually, he was even responsible for terminating LMAES and pursuing this lawsuit on LMITCO's behalf. *See Lockheed*, 2004 U.S. Dist. LEXIS 24460 at 15 n.2.

[309] *Id.* at 14; *See also* LMITCO/EG&G Findings of Fact, *supra* note 266, at 21 (citing TR 311, 11. 15- TR 312, 11.6 and highlighting testimony by Winston wherein he indicated that he was convinced that LMAES knew more about the contents of the pit than the EG&G presenters by the time EG&G conducted a tour of the pit on Sept. 18, 1991).

[310] *Id.* at 19 (citing TR 288, 11. 11-13; TR 289, 11.24 – TR 290, 11.18).

[311] *Lockheed*, 2004 U.S. Dist. LEXIS 24460 at 15 (citing PEx. 1066 at p. 3).

excessive contingencies to cover the large number of items beyond their control."[312] It also expressed concerns that the risks involved in participating in the project were "demonstrably imprudent."[313] However, LMITCO was not persuaded by such arguments.

Having been unsuccessful in convincing LMITCO to change the contract type, LMAES refocused its risk-shifting efforts and tried to transform the specifications in the contract from performance specifications to design specifications instead.[314] If LMAES had been successful in this venture, the risk of design failure would have shifted from LMAES to LMITCO. However, EG&G/LMITCO and DOE made concerted efforts to ensure they did not get involved in the contract in a manner that would change the nature of the contract's performance specifications, because they wanted to avoid such a risk shift.[315] Maintaining this type of hands-off, performance specification approach was a cornerstone of the EG&G/LMITCO and DOE philosophy regarding the Pit 9 subcontract.[316]

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[312] LMITCO/EG&G Findings of Fact, *supra* note 266, at 21 (citing TR 279, 11.1 – TR 283, 11.14).

[313] *Id.* at 20; *See also Lockheed*, 2004 U.S. Dist. LEXIS 24460 at 63 (referencing LMAES' Mar. 28, 1997 request that the contract be reformed from a fixed-price contract to a cost-plus contract).

[314] *Lockheed*, 2004 U.S. Dist. LEXIS 24460 at 67.

[315] *Id.* at 60; *See also Lockheed,* 50 Fed. Cl at 556-57 (explaining that one of the purposes of the DOE POB was to ensure that LMITCO did not perform any activities that would shift LMAES' fixed-price risk assumption).

[316] *See* LMITCO/EG&G Findings of Fact, *supra* note 266, at 99 (quoting DOE's philosophy: "[t]he only way this approach can work is for the DOE and EG&G to maintain a hands off role to the maximum extent possible. In other words, the DOE and

Despite LMAES' recognition of the substantial uncertainties shrouding Pit 9's contents; its obvious concerns regarding a fixed price contract for such work; and LMITCO's refusal to alter the contract's performance-based nature (particularly the Guarantee of Performance clause), LMAES still signed on to the Pit 9 project. Such a risky undertaking was largely motivated by LMAES' belief that the Pit 9 project would serve as its gateway into the environmental remediation market – a market it estimated could be worth billions[317] – and its confidence that it could use the contract's Differing Site Conditions clause to cover any unexpected contingencies.[318] Unfortunately, at least for LMAES, it was wrong on both counts.

EG&G should get out of the way and let the selected subcontractor do the work it was hired to do, except to the extent absolutely necessary . . .").

[317] *See Lockheed*, 2004 U.S. Dist. LEXIS 24460 at 7; *See also* LMITCO/EG&G Findings of Fact, *supra* note 266, at 453 (providing excerpts from an April 4, 1994 briefing wherein LMAES espoused that the "[m]arket is too big to ignore," "[t]he technical risks may have been too great for a small business but not to a behemoth like Lockheed, especially in light of the possible rewards," and "[t]he DOE Mixed Waste Market alone has major growth potential $8 billion realizable by 1999 and a total market valued at $300 billion.").

[318] *See Lockheed*, 2004 U.S. Dist. LEXIS 24460 at 14-15, 27.

G. Risk Allocation Ramifications

In 1997, after experiencing significant performance problems;[319] scheduling delays;[320] safety issues;[321] design setbacks;[322] equipment inadequacies;[323] substantial losses;[324] and repeated failures to reform the contract, LMAES slowed its Pit 9 work effort and tried to negotiate more LMAES-favorable contract terms. However, faced with new cost completion estimates of $517.4 million[325] (more than triple its original cost

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[319] *See* LMITCO/EG&G Findings of Fact, *supra* note 266, at 69, 105 (asserting that a lack of management systems, unqualified personnel, and underbidding were main contributors to LMAES' performance problems, as evidenced by the deposition of a Lockheed Pit 9 review team member and internal LMAES' briefings concluding estimates were flawed); *See also Lockheed*, 2004 U.S. Dist. LEXIS 24460 at 41 (citing an internal Oct. 1995 LMAES report regarding its "test bed" wherein LMAES concluded "we failed" and attributed its failure to, among other things, poor design; a failure to staff the project with experts; corrosion; and a failure to conduct small-scale testing prior to building the full-scale test bed).

[320] *See* LMITCO/EG&G Findings of Fact, *supra* note 266, at 132 (referencing an internal memo sent in Dec. 1996 by the then program manager stating "[a]s you are all probably aware, the Pit 9 program is in a severe cost overrun condition with equal schedule concerns. . . .").

[321] *See id.* at 168 (quoting LMAES' response to the Source Evaluation Board regarding its Advanced Mixed Waste Treatment Project proposal as follows: "[a]s a consequence of this inadequate staffing, the radiation protection program and the PSAR [(Preliminary Safety Analysis Report)] were deemed, correctly, to be totally inadequate by DOE.").

[322] *See e.g.*, *Lockheed*, 2004 U.S. Dist. LEXIS 24460 at 25-26, 42 (reporting the LMAES Counter-Current Ion Exchange (CCIX) process; use of stainless steel tanks and piping; and unwieldy machinery size as examples of LMAES design setbacks/failures).

[323] *See id.* at 41 (citing pumps clogging and machinery corroding as examples of equipment inadequacies).

[324] *See* LMITCO/EG&G Findings of Fact, *supra* note 266, at 286 (referencing a Mar. 31, 1996 Contract Status Review (CSR) that projected a loss on the Pit 9 project in excess of $150 million).

[325] *Lockheed*, 2004 U.S. Dist. LEXIS 24460 at 64.

estimate)[326] and LMITCO's continued refusal to restructure the contract, LMAES eventually stopped work altogether.[327] After failing to provide adequate assurances to LMITCO that it would perform its obligations, LMAES was terminated for default on June 1, 1998.

LMITCO gave two reasons for the termination: (1) failure to make progress and (2) anticipatory repudiation of the contract.[328] In accordance with the Guarantee of Performance clause, the termination letter also demanded that LMAES refund LMITCO $54,386,165 – the amount of progress payments it had received for work under the subcontract.[329] Although LMAES had planned to use the Differing Site Conditions clause to cover any unexpected contingencies it encountered, it never provided LMITCO written notice of such differing site conditions.[330] Rather, LMAES argued, in large part, that its failure to successfully remediate Pit 9 was caused by LMITCO's refusal to approve its remediation systems and technical baseline.[331] These outstanding issues and debts were ultimately resolved in court.[332]

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[326] LMAES' original cost estimate was $178,608,000. *See id.*

[327] *See id.* at 68 (noting that "LMAES stopped all progress on the project by November, 1997, and was only engaged in moth-balling activities thereafter.").

[328] *Id.* at 69.

[329] *Id.* at 69-70.

[330] *Id.* at 98.

[331] At trial, LMAES made several other claims as well, but this was, arguably, the primary argument it made throughout the course of the project and the trial. *See id.*

[332] *Id.*

In a comprehensive, 100-page decision, the LMITCO-LMAES court concluded that the termination for default was proper based on the contract's risk allocation scheme.[333] In reaching this conclusion, the court determined that LMAES had assumed "the entire risk that its design of a remediation process might fail."[334] Therefore, LMITCO had no obligation to approve LMAES' systems or technical baseline – approvals which would have constituted a contract re-write and resulted in a risk shift.[335]

Further, because LMAES had never provided LMITCO written notice of a differing site condition, the court essentially found that issue moot.[336] Consequently, the court ordered LMAES to return the monies paid to it by LMITCO, plus interest, and to pay approximately $11 million to dispose of the facility it built to do the work.[337] The court's ruling was a stinging defeat for LMAES. However, neither DOE, EG&G/LMITCO, nor the public can chalk up a victory – more than a decade and a half has passed since Pit 9 was listed as a Superfund site, yet the Pit 9 remediation is still nowhere near complete.[338]

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[333] *Id.* at 99.

[334] *Id.* at 92.

[335] *Id.* at 67.

[336] *See id.* at 98.

[337] *Id.* at 99.

[338] At the time of trial, the "Alt Pit 9" project was already in place, but that project had not even passed onto the 10 percent design stage. The design stage, alone, was estimated to cost $1.58 billion. That figure included several costs that are incomparable to LMAES' project costs, but even when such incomparable costs were eliminated, the estimate still came to approximately $760 million. *See id.* at 73-75.

VI. THE PERFORMANCE-BASED CONTRACTING (PBC) INITIATIVE

The LMITCO-LMAES Pit 9 performance-based contracting (PBC) approach is representative of the current Government initiative to use PBC to the greatest extent possible to procure federal environmental remediation services[339] and, thus, align environmental cleanup efforts with the President's Management Agenda.[340] High-priced/low-return cleanup contracts, designed to reward contractors simply for fulfilling process requirements, were, in large part, the impetus for the Government's PBC initiative.[341] As opposed to those contracts, performance-based contracts (PBCs) reward contractors for achieving results – not merely "going through the motions." Consequently, under the PBC approach, the performance risk is transferred to the contractor to motivate the contractor to complete the remediation in the most timely and cost effective manner.[342]

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339 *See e.g.*, Memorandum from Maureen T. Koetz, SAF/IEE (Environment, Safety and Occupational Health) to AF/ILE, AFRPA/DR, AF/SGO, and AF/XOO, Air Force Cleanup Program Performance-Based Management Policy (Oct. 27, 2004) (on file with author) (indicating that the Air Force cleanup policy mandates the use of "[p]erformance-based contracting and acquisition strategies . . . to the greatest extent possible.").

340 OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, THE PRESIDENT'S MANAGEMENT AGENDA FY2002 (2001) (espousing a performance-based, results-oriented agenda as opposed to an agenda based solely on promises and processes).

341 In 1987, DoD, alone, estimated it would take $14 billion and 13 years to fulfill its cleanup obligations. Over the past 20 years, $30 billion has been spent on DoD's still incomplete program. In 2004, DoD provided new estimates, including costs exceeding $50 billion and project completion beyond 2014. *See* Air Force Center for Environmental Excellence (AFCEE), *Performance Based Contracting, PBSA in AF Environmental Remediation* Contracts 2 (Aug. 2004)(on file with author).

342 ASTSWMO GUIDE, *supra* note 10, at 3.

A. Types of Performance-Based Contracts (PBCs)

Various types of contracts may be used to achieve performance-based remediation goals. However, given their Government-favorable risk-shifting nature, the Government generally prefers to use firm fixed-price contracts or firm fixed-price contracts with insurance (commonly referred to as "guaranteed" fixed-price contracts).[343] As previously discussed, firm fixed-price contracts place the maximum risk and responsibility for costs and resulting profits or losses upon the contractor.[344] Guaranteed fixed price contracts, on the other hand, may allow the contractor to shift some of those risks and responsibilities to a third-party insurer.[345] Further, the insurance component of guaranteed fixed price contracts generally creates greater certainty that the remediation will actually be completed on time, on budget.[346]

B. Government Agency Involvement

The EPA, DOE, and DoD have all embraced the Government's PBC initiative. To that end, each agency has issued guidance and developed models to aid in

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[343] *See* DERP REPORT FY2004, *supra* note 7, at I-15; Conway-Jones, *supra* note 7, at 11.

[344] *See supra* Part III(A)(2).

[345] *See supra* Part VI.

[346] *See id.*; ASTSWMO GUIDE, *supra* note 10, at 4.

expeditiously implementing PBC.[347] Further, the agencies have set goals to encourage and measure success.[348]

DoD military components have been particularly active in utilizing PBC and setting high PBC goals. The Army is the military services' leader in aggressively implementing PBC. For example, in fiscal year (FY) 2004, the Army awarded fourteen performance-based contracts (PBCs) at active installations, assigning 36 percent of its annual environmental restoration program funds to those PBCs.[349] Additionally, the Army set a goal to further increase such funding for PBCs to 50 percent by the end of FY2005.[350] Recognizing the benefits of PBC, other military services and federal agencies have established similar, though less aggressive, PBC implementation goals.[351]

C. Potential Benefits of PBC

PBC is frequently touted as a faster, more cost-effective approach for attaining site remediation and closure.[352] Buzz words commonly used to describe PBC include

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[347] *See e.g.*, EPA, RESULTS-BASED APPROACHES AND TAILORED OVERSIGHT GUIDANCE (2003); DOE TOP-TO-BOTTOM REVIEW, *supra* note 8, at II-2; DERP REPORT FY2004, *supra* note 7.

[348] *See e.g.*, DOE TOP-TO-BOTTOM REVIEW, *supra* note 8, at II-2; DERP REPORT FY2004, *supra* note 7, at I-7, I-15, I-22.

[349] DERP REPORT FY2004, *supra* note 7, at I-7.

[350] *Id.*; *But see* ASTSWMO GUIDE, *supra* note 10, at 2 (stating that the Army FY2005 goal is 80% rather than 50%).

[351] *See e.g.*, AFCEE, *supra* note 341 (reporting the Air Force PBC goal to be 20% of restoration projects); DOE TOP-TO-BOTTOM REVIEW, *supra* note 8, at II-2 (maintaining that one of DOE's goals is to safely complete all cleanup and disposal by 2035).

[352] *See* ASTSWMO GUIDE, *supra* note 10, at 2.

enhanced contractor performance, innovation, and flexibility.[353] Additionally, reduced Government oversight and a risk shift from the Government to the private sector are often viewed as PBC benefits.[354]

PBC has proven itself worthy of such buzz and advertised benefits on a number of occasions. DoD PBC success stories include the use of PBCs to achieve cleanups at Ft. Leavenworth,[355] Ft. Dix,[356] and the Lake City Army Ammunition Plant (LCAAP).[357] DOE and other agencies have reported similar PBC gains in cleanup and risk reduction.

The Rocky Flats remediation is, perhaps, DOE's most widely publicized PBC success story. In 1997, the estimated cost to remediate Rocky Flats was $17.1 billion and the date of completion was FY2045.[358] However, in 2002, the Rocky Flats estimated completion cost was reduced to $7.1 billion and the date of completion was accelerated to FY2006.[359] According to DOE, implementing a PBC strategy for the Rocky Flats project was instrumental in this dramatic time and money reduction.[360]

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[353] *See* USAEC, *supra* note 194, at 2.

[354] *Id.*

[355] DERP REPORT FY2004, *supra* note 7, at I-7 (reporting that "[s]ince 2001, Fort Leavenworth has made tremendous progress using GFPR [Guaranteed Fixed Price Remediation]": of nine sites identified in the first contracting phase, four are almost complete; three have remedies in place; and two are in the interim remedial action stage).

[356] *See* ASTSWMO GUIDE, *supra* note 10, at 27 (indicating that PBCs are being used at ten Ft. Dix sites; those sites are ahead of schedule; and both EPA and the State have been satisfied with the progress and quality of work thus far).

[357] *See id.* at 25 (asserting that, "[t]o date, LCAAP under the PBC has completed more quality primary and secondary documents than in any other year of its Installation Restoration Program.").

[358] DOE TOP-TO-BOTTOM REVIEW, *supra* note 8, at III-19.

[359] *Id.*

D. Potential Drawbacks of PBC

While PBC success stories suggest that PBC can be an effective cost-cutting, time-reduction approach, it is not necessarily always the *best* approach. Rather, the profit motive, reduced agency oversight, and contractor risks inherent in PBC represent some of the potential drawbacks of using PBC to procure federal environmental remediation services. This section explores such drawbacks and offers anecdotal examples of some of PBC's shortcomings.

1. Profit Motive

One of the major criticisms of PBC is that the PBC profit motive prompts contractors to cut corners and push for the cheapest remedial actions possible – irrespective of what is best for the protection of human health and the environment.[361] Thus, unlike the cost-reimbursement nature of other contracts (e.g., time-and-materials contracts), which motivates contractors to identify additional required work, the typically fixed-price nature of PBCs, arguably, motivates contractors to reduce the scope of work. Contractors are motivated to reduce the scope of work, because such a reduction generally leads to greater profits.[362]

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[360] *Id.* at III-19, II-7. Contractor innovations (including the development of a process for decontaminating boxes so they could be shipped, intact, to low-level waste disposal cells) also reduced costs and schedules.

[361] *See e.g.,* Air Force (AF) Atlanta Regional Environmental Office (REO), *Regulator Views on Performance Based Contracting (PBC)* (2004)(on file with author); ASTSWMO, *supra* note 10, at 22, 24.

[362] *See* ASTSWMO GUIDE, *supra* note 10, at 22.

Further, the PBC profit motive has been criticized for causing PBC contractors to pressure regulators to give them preferential treatment – often to the detriment of others seeking similar reviews and approvals to meet their goals.[363] In this manner, the PBC profit motive can be, to a large degree, a double-edged sword. On one hand, it encourages contractors to quickly complete projects so they can earn greater profits – a result that benefits everyone. However, on the other hand, the same profit motive can induce contractors to trod all over regulators and other contractors – a result that benefits no one but, perhaps, the PBC contractor.

2. Reduced Government Agency Oversight

Similarly, reduced Government oversight – another trademark of PBCs – can be good or bad. In some cases, it increases the efficiency of both the Government and the contractor – freeing Government personnel to do other things and enabling contractors to exercise ingenuity.[364] However, in other cases, it causes confusion;[365] overburdens state and EPA regulators;[366] and increases skepticism regarding the Government's motives.[367]

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[363] *See* AF Atlanta REO, *supra* note 361 (citing a case where a PBC contractor demanded immediate review/approval of his work to get the job done as quickly as possible and reporting that "[t]his did not go well with the other bases who needed regulator support to meet their own project goals.").

[364] *See supra* Part V(B)(2).

[365] *See* SMI AND PROJECT PERFORMANCE CORP., GUARANTEED/FIXED PRICE REMEDIATION CONTRACT LESSONS LEARNED FINAL REPORT 2 (2002) [hereinafter SMI & PROJECT PERFORMANCE REPORT] (on file with author) (noting that the innovative nature of PBCs may cause confusion and some suspicion among regulators); ASTSWMO GUIDE, *supra* note 10, at 18 (identifying confusion as to how to resolve disputes as one drawback of PBCs).

[366] *See* ASTSWMO GUIDE, *supra* note 10, at 14 (asserting "[i]if one of the advantages of PBC for DoD is the need for less oversight, then one of the drawbacks for States is the

The Fort Sheridan cleanup effort[368] offers a good example of the negative impacts reduced Government oversight can have on cleanup projects. During the Ft. Sheridan cleanup project, a reduction/lack of Government oversight reportedly contributed to a Clean Water Act violation; the time-consuming resolution of contractor activities that were inconsistent with prior decisions and approved designs; and a multitude of contractor questions that should have been handled by the agency (DoD), but were, instead, posed to and fielded by the EPA.[369] Consequently, implementation of PBC at Fort Sheridan has, arguably, required significantly more time and resources than would have been required under a more traditional approach.[370]

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need for more regulatory oversight," because, among other things, "[u]nder PBC, regulators field significantly more contractor questions); AF Atlanta REO, *supra* note 363 (noting that "PBC will dump large, unplanned work programs on the regulators . . . states will bear the brunt under PBC . . . [and] the EPA will not manage the Air Force's [or other agency's] contractors.")

[367] *See* Memorandum from Lt. Col John M. Smith, HQ AFCEE/JA, to HQ AFCEE/TD, Guaranteed Fixed Price Remediation Issues (Feb. 12, 2004) (suggesting that regulators perceive that agencies are trying to walk away from clean up responsibilities by turning programs over to contractors and, therefore, it should be made clear to the regulators that agencies are not trying to avoid their responsibilities; rather, they are seeking a better, faster way to meet public health goals.)

[368] The objective of the Ft Sheridan PBC cleanup effort was to perform all necessary environmental restoration work necessary to achieve regulatory closure of Ft. Sheridan. Remedial actions pertained to landfills; coal and pesticide storage areas; underground storage tanks; unused wells; and lead-based paint removal. *See* SMI & PROJECT PERFORMANCE REPORT, *supra* note 365, at 14.

[369] *See* ASTSWMO GUIDE, *supra* note 10, at 22-23 (suggesting these problems were caused, in large part, by confused lines of authority and a lack of agency communication and guidance).

[370] *See id.* at 23 (reporting that, under the original contract, the entire Ft. Sheridan cleanup was to be completed in Sept. 2003; however, the latest projections for two of the landfills, alone, exceeded that deadline by over a year).

3. Contractor Risks

Additional drawbacks stem from the PBC risk allocation scheme. Since most PBCs are fixed price contracts, the risk-related drawbacks associated with such contracts, discussed in Chapter V, apply. Therefore, PBC bids tend to be more contingency-based and, thus, higher priced than bids that would be proposed under non-PBC, non-fixed price contracts.

Another risk-related drawback of PBC is that fewer experienced environmental restoration firms may bid for this type of contract – either because risks are too high; corporate philosophies prevent them from taking on more risk than usual; or they have a poor track record of winning PBCs.[371] Consequently, the winning and/or only bidder may be an inexperienced firm willing to assume unreasonable risks just to "buy in" to the field.[372] Alternatively, such a bidder may be nothing more than the "best of the worst." Needless to say, each of these scenarios presents obvious drawbacks.

When these drawbacks are not carefully considered before a decision is made to use PBC for a particular project, both the Government and the contractor often receive less than the benefit of their bargain. One must look no further than the LMITCO-LMAES Pit 9 subcontract to see how such unfulfilled expectations can affect the Government and the contractor. Unfortunately, however, the biggest loser in these situations is often the public health and the environment.

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[371] *Id.* at 5, 15 (reporting that the prospective bidder and insurer uncertainties as to the remedy for Landfill 5 in the Ft. Sheridan cleanup effort led only one company to submit a bid and that bid was non-responsive).

[372] LMAES was, arguably, motivated by such a "buy-in" opportunity when it agreed to the terms of the LMITCO-LMAES Pit 9 remediation subcontract.

E. Recommended PBC Considerations

PBC is not a "one-size-fits-all" solution. Therefore, even though it generally sounds good on paper, putting PBC into practice may not always be the best contracting approach. Accordingly, with stakes like the public health and the environment on the line, every aspect of PBC – benefits and drawbacks alike – must be analyzed before a decision is made to use a PBC strategy for any given environmental remediation project.

VII. Conclusion

In recent years, the Government has increasingly pushed remediation contractors to insulate it from the risks involved in federal environmental cleanups. Contractual and insurance-based risk-shifting measures, ultimately taking shape in the Government's PBC initiative, have played a crucial role in effecting such a "push." Contractors have fought back – primarily, by declining to undertake certain ill-defined remediation projects; using conservative assessment methodologies backed with higher bids; making greater demands for more thorough site characterizations/investigations; and even creating skeletal corporations with limited assets for high-risk cleanup projects.

Unfortunately, this preoccupation, by both parties, with shifting risks has often resulted in an "us-against-them," attack/counter-attack mentality between the Government and Government contractors. Consequently, though both parties recognize that they need each other to be able to remediate sites, they often seem to forget that they share the same goals. To that end, contractor successes are Government successes. Likewise, contractor failures are Government failures.

Accordingly, there is no Government victory in finding flaws or shortcomings in contractor work. Rather, the true Government victory lies in rewarding contractors for

meeting and exceeding expectations. Such successful contractor outcomes equate to successful Government, public health, and environment outcomes. Therefore, the Government should do everything in its power to help contractors fulfill remediation goals while still preserving adequate incentives to ensure contractor accountability.

Striking such a balance includes ensuring that the PBC approach, though highly encouraged, does not become a "presumptive" approach. Despite its numerous benefits and obvious risk-shifting appeal, PBC is inappropriate for many cleanup projects – particularly those for which such an approach would simply be too risky for contractors to undertake. Such projects generally include cleanups that are inadequately characterized; cleanups that involve groundwater remediation with no discrete end points; and cleanups that require long-term operations or monitoring. Therefore, the decision to use the PBC strategy should always be site specific and carefully calculated in light of what is known about site contamination and other conditions. Blindly applying PBC, without conducting such an analysis first, will likely set contractors up to fail – a result that, as previously discussed, benefits no one.

Further, even if the decision is made to use PBC for a particular project, the Government must stay involved in overseeing the remediation effort. Though reduced Government oversight is promoted as one of PBC's main cost and time-saving benefits, the Government cannot merely hire a contractor to perform the remediation; hand that contractor the project; walk away; and expect to get the results it desires. Therefore, "tailored" oversight is a better approach.

True to its name, tailored oversight is, simply, oversight that is tailored to meet the needs of individual sites. Under such an approach, the appropriate level of

Government oversight is dependant upon the complexity of the site; the past performance, financial backing, and technical capabilities of the contractor; and any other factors that may otherwise impact (positively or negatively) the timeliness, efficiency, and protective qualities of cleanup operations. Therefore, it may, or may not, include "reduced" oversight. Nevertheless, this type of customized oversight will save time and money in the long run by, among other things, precluding the type of setbacks experienced in the LMITCO-LMAES Pit 9 project – setbacks caused, in part, by allowing an obviously failing contractor to stumble along for prolonged periods of time, thereby delaying and, at least indirectly, impeding public health and environment goals.

To do their part in improving the federal environmental remediation process, contractors should take affirmative steps to protect themselves, yet still promote open communication and cooperative information sharing. Taking care of themselves enables contractors to take better care of the Government. Such self-preservation requires gaining a thorough understanding, within economic limits, of the potential environmental compliance and cleanup issues relative to particular projects; conducting realistic assessments of risk and financial thresholds before taking on such projects; and, ultimately, walking away from projects and contract terms that present unreasonable risks.

Promoting open communication and cooperative information sharing, on the other hand, requires contractors to completely step outside their self-assessment "box" while they focus on the needs of the project at hand. Making this mental transition should help contractors to redirect their efforts so they can work with, not against, the Government to reduce uncertainties by sharing collected information; offering advice based on contractor

expertise; and voicing, not hiding, concerns. Openly exchanging lessons learned and best practices should also reinforce the notion that the Government and contractors must work together, not apart, to successfully remediate sites.

Both the Government and Government contractors have begun to experience a certain measure of success in these areas. However, there is still significant work to be done to ensure the federal environmental remediation procurement program, as a whole, and its Government-contractor risk-sharing component, in particular, achieve the desired end results. After all, the "[g]overnment likes to begin things – declare grand new programs and causes and national objectives. But good beginnings are not the measure of success. What matters in the end is completion. Performance. Results."[373]

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[373] President George W. Bush, *President's Message, in* THE PRESIDENT'S MANAGEMENT AGENDA, *supra* note 340, at 1.

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